

Grade 7 Standards

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Ratios and Proportional Relationships

7.RP.A.01

Items 1-9

ITEM 1

Gordon makes $\frac{4}{5}$ of a recipe with $\frac{2}{3}$ bag of cheese. At this rate, what fraction of the bag of cheese will Gordon use to make the entire recipe?

A. $\frac{1}{4}$

B. $\frac{1}{3}$

C. $\frac{4}{5}$

D. $\frac{5}{6}$

ITEM 2

Marcia dusts $\frac{3}{4}$ of her cabinets with $\frac{1}{3}$ bottle of dusting polish. At this rate, what fraction of the bottle of dusting polish will Marcia use to dust all of her cabinets?

A. $\frac{1}{4}$

B. $\frac{7}{12}$

C. $\frac{4}{9}$

D. $\frac{5}{12}$

ITEM 3

Jason ran $\frac{7}{8}$ of a mile in 12 minutes. How many miles can Jason run in 1 hour?

A. $4\frac{3}{8}$ miles

B. $5\frac{1}{4}$ miles

C. $10\frac{1}{2}$ miles

D. $13\frac{7}{10}$ miles

ITEM 4

A small circle has a diameter of 5 centimeters. A larger circle has a diameter that is $\frac{3}{2}$ the size of the small circle's diameter. What is the unit rate associated with the ratio of the area of the small circle to the area of the large circle?

A. $\frac{10}{3}$

B. $\frac{4}{9}$

C. $\frac{3}{2}$

D. 9

ITEM 5

Chris is trimming trees. He can trim $\frac{2}{3}$ of a tree in 30 minutes. What is Chris's rate for trimming trees in trees per hour?

A. $\frac{1}{45}$

B. $\frac{1}{3}$

C. $\frac{3}{4}$

D. $\frac{4}{3}$

ITEM 6

Amelia knits $\frac{1}{10}$ of a scarf in 48 minutes. What fraction of a scarf can Amelia knit in 1 hour?

A. $\frac{1}{480}$

B. $\frac{2}{25}$

C. $\frac{1}{8}$

D. $\frac{5}{24}$

ITEM 7

In $\frac{3}{4}$ of an hour Ryan codes $\frac{3}{5}$ of his game. At this rate, how much of the game can he code in 1 hour?

Enter your answer as a decimal below.

0.8

ITEM 8

A store sells different flavors of fudge candy. Mary spends \$18.20 on $3\frac{1}{2}$ pounds of peanut butter fudge. What is the rate, in dollars per pound, for the fudge that Mary bought?

Write your answer as a decimal below.

5.20

5.2

ITEM 9

To stay healthy, Kimberly jogs exactly one mile around a track every day. Today she finished 0.75 of the mile in $\frac{2}{5}$ of an hour. What is Kimberly's jogging rate today?

A. $\frac{3}{10}$ miles per hour

B. $\frac{8}{15}$ miles per hour

C. $1\frac{7}{8}$ miles per hour

D. 2 miles per hour

Ratios and Proportional Relationships

7.RP.A.02

Items 10-49

ITEM 10

Alice's yearly salary as a legal assistant will increase at a constant rate. Which table shows Alice's yearly salary?

A.

Year	2008	2009	2010	2011
Salary	\$24,500	\$26,000	\$27,500	\$29,000

B.

Year	2008	2009	2010	2011
Salary	\$24,500	\$26,000	\$26,500	\$27,000

C.

Year	2008	2009	2010	2011
Salary	\$24,500	\$26,000	\$28,500	\$32,000

D.

Year	2008	2009	2010	2011
Salary	\$24,500	\$26,500	\$29,500	\$33,500

ITEM 11

Which equation has a constant of proportionality equal to 8?

A. $4y = 8x$

B. $2y = 16x$

C. $3y = 21x$

D. $8y = 8x$

ITEM 12

Jana needs to bake cookies for her class. The recipe says that she needs $4\frac{2}{3}$ cups of sugar for 7 batches of cookies. How much sugar is in one batch of cookies?

A. $\frac{2}{3}$

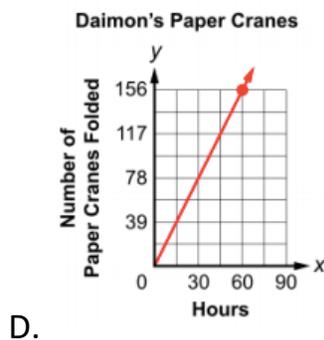
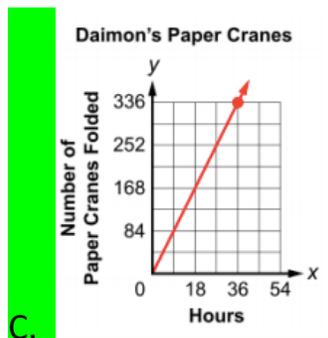
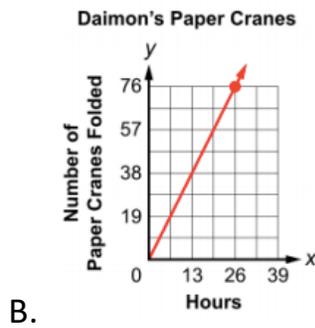
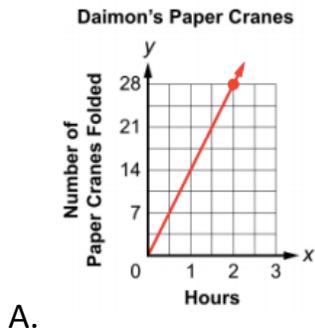
B. $1\frac{1}{2}$

C. $4\frac{2}{3}$

D. $32\frac{2}{3}$

ITEM 13

Victoria folded 56 paper cranes in 6 hours. Daimon folded paper cranes at the same rate as Victoria. Which graph could model the rate at which Daimon folded paper cranes?



ITEM 14

Use the table to answer the question.

Cost of Concert Tickets

Number of Tickets (t)	Cost (c)
2	\$10.50
5	\$26.25

The cost of tickets to a school band concert is shown in the table.

Which equation models the cost of the tickets?

A. $c = 5.25 t$

B. $c = 10.50 t$

C. $c = 15.75 t$

D. $c = 26.25 t$

ITEM 15

Mark agreed to babysit his younger cousin every Wednesday for the same hourly rate. Last Wednesday, Mark made \$38 for babysitting for 4 hours. What equation can be used to determine how much money, m , Mark will make for every hour, h , he babysits, so long as the hourly rate stays the same each time?

A. $m = 38x$

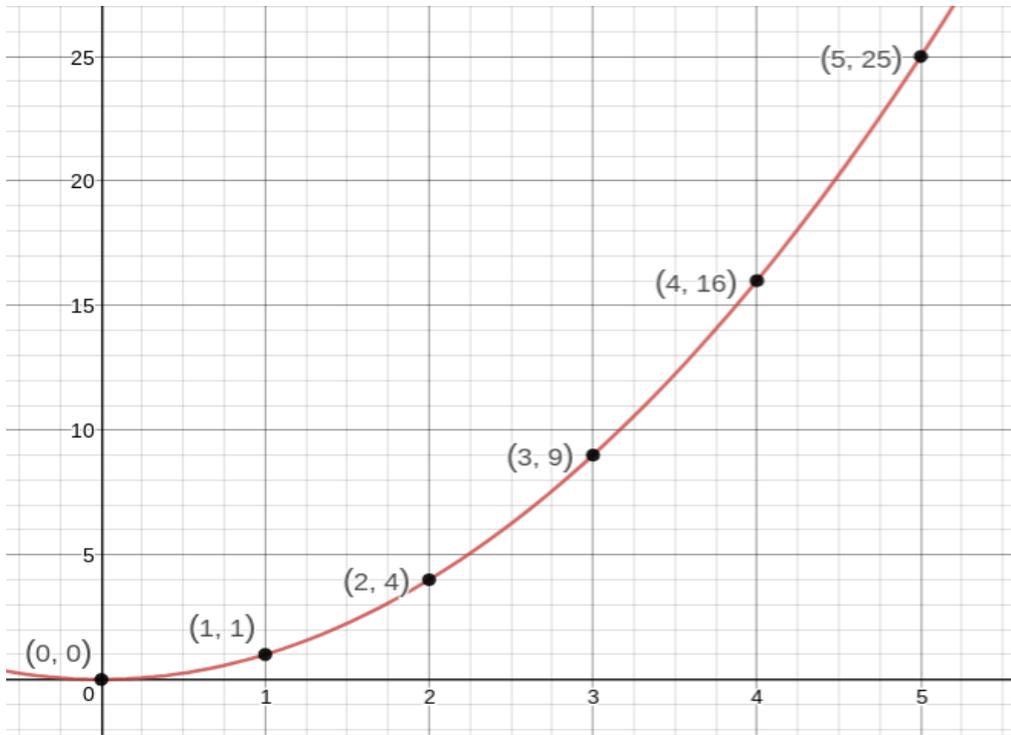
B. $m = \frac{4}{38}x$

C. $m = 9.5h$

D. $9.5m = h$

ITEM 16

Danny examined the following graph.



He concluded that the graph is representative of a proportional relationship for these reasons:

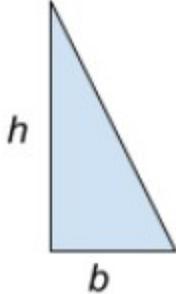
- Reason 1: The graph contains the point $(0, 0)$.
- Reason 2: The graph contains only positive values.
- Reason 3: When he created a table of values with the points shown, he found a multiplicative relationship between each x-value and its corresponding y-value.

For each of Danny's reasons, explain whether or not it must indicate that the points in the table are in a proportional relationship. Justify your response for each reason.

Enter your explanations and your justifications below.

ITEM 17

A right triangle is shown. The base, b , of the triangle measures 2.25 centimeters and the height, h , of the triangle measures 4.5 centimeters.



Which **three** pairs of lengths are proportional to the lengths of the given triangle?

A. $h = 4.25$ cm

$b = 2$ cm

B. $h = 9$ cm

$b = 4.5$ cm

C. $h = 13.5$ cm

$b = 6.75$ cm

D. $h = 14.5$ cm

$b = 12.25$ cm

E. $h = 18$ cm

$b = 9$ cm

ITEM 18

Which table shows a proportional relationship between the values of x and y ?

A.

x	0.25	0.5	0.75
y	0.5	0.75	1

B.

x	0.25	0.5	0.75
y	0.51	1.01	1.51

C.

x	0.25	0.5	0.75
y	0	0.25	0.5

 D.

x	0.25	0.5	0.75
y	0.75	1.5	2.25

ITEM 19

Which table shows a proportional relationship between the values of x and y ?

A.

x	y
$\frac{1}{2}$	$\frac{1}{6}$
1	$\frac{1}{3}$
$\frac{3}{2}$	$\frac{1}{2}$

B.

x	y
$\frac{1}{2}$	0
1	$\frac{1}{2}$
$\frac{3}{2}$	1

C.

x	y
$\frac{1}{2}$	2
1	1
$\frac{3}{2}$	$\frac{2}{3}$

D.

x	y
$\frac{1}{2}$	1
1	$\frac{3}{2}$
$\frac{3}{2}$	2

ITEM 20

Which table shows a proportional relationship between the values of x and y ?

A.

x	0	1	2
y	1	3	5

B.

x	0	1	2
y	2	3	4

C.

x	0	1	2
y	0	2	4

D.

x	0	1	2
y	4	6	8

ITEM 21

The table shows a proportional relationship between the number of gallons consumed and the total number of miles driven by Madelyn in her convertible.

Number of Gallons of Gasoline	Number of Miles
3	93
5	155
8	248
12	372

Which **two** of the following choices could also be values in the table?

- A. 0.03 miles per gallon
- B. 31 miles per gallon**
- C. 46.5 miles per 2 gallons
- D. 123 miles per 4 gallons
- E. 341 miles per 11 gallons**

ITEM 22

The table shows a proportional relationship between the number of pounds of boiled crawfish purchased and the total cost of the crawfish.

Number of Pounds of Boiled Crawfish	Total Cost in \$
3.56	13.35
5	18.75
6.12	22.95

Some of the values in the table are missing. Select **three** of the choices below that could be used as the missing values.

A. 2 pounds of crawfish for \$7.50

B. 3 pounds of crawfish for \$10.50

C. 6.5 pounds of crawfish for \$23.33

D. 8 pounds of crawfish for \$30

E. 11 pounds of crawfish for \$41.25

ITEM 23

Which of the following tables represents a proportional relationship between the x and y values?

A.

x	1	2	3	4
y	2	3	4	5

 B.

x	1	2	3	4
y	3	6	9	12

C.

x	0	2	3	4
y	5	15	20	25

D.

x	0	2	3	4
y	0	3	4	5

ITEM 24

The table below represents a proportional relationship for the creation of a purple paint mixture.

# of quarts red paint, r	# of quarts blue paint, b
5	3
10	6
20	12

Based on the values in the table, find the constant of proportionality that represents the amount of quarts of blue paint that must be mixed with every quart of red paint in order to make a corresponding amount of purple paint.

Enter your answer in decimal form below.

0.6 _____

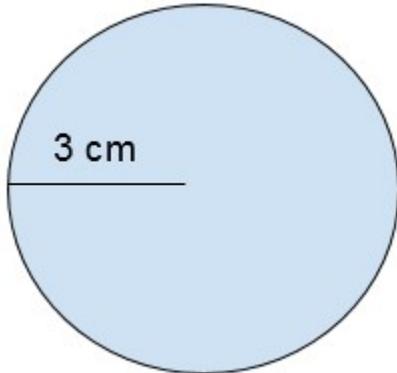
ITEM 25

A factory makes pizza boxes using 8 cutting machines. Each machine cuts 12 boxes every $\frac{3}{4}$ minute. How many boxes can all 8 machines cut in one minute?

- A. 16 boxes
- B. 72 boxes
- C. 120 boxes
- D. 128 boxes**

ITEM 26

For any circle, the proportional relationship between the radius and circumference of any circle can be modeled by the equation $C = kr$. The circumference of the circle below is 18.84 centimeters.



- Identify the constant of proportionality that describes the relationship.
- Show or explain your work for identifying the constant of proportionality.
- Write an equation using the constant of proportionality that models the relationship between the circle's radius, r , and the circle's circumference, C .

Enter your constant of proportionality, work or explanation, and your equation below.

$$r = 3\text{cm}, C = 18.84\text{cm}$$

$$k = C/r = 18.84/3 = 6.28$$

$$C = 6.28r$$

ITEM 27

Coby drives from Alexandria to Shreveport. While on Interstate 49, he sets the cruise control to travel at a constant rate. For this portion of his trip he takes 1.5 hours to drive 106.5 miles. What is the constant of proportionality for this portion of his trip?

Enter your answer in the space provided.

71
71.0

ITEM 28

The table represents a proportional relationship between the values of x and y .

x	y
4	3
6	$4\frac{1}{2}$
8	6

What is the constant of proportionality for the values in the table?

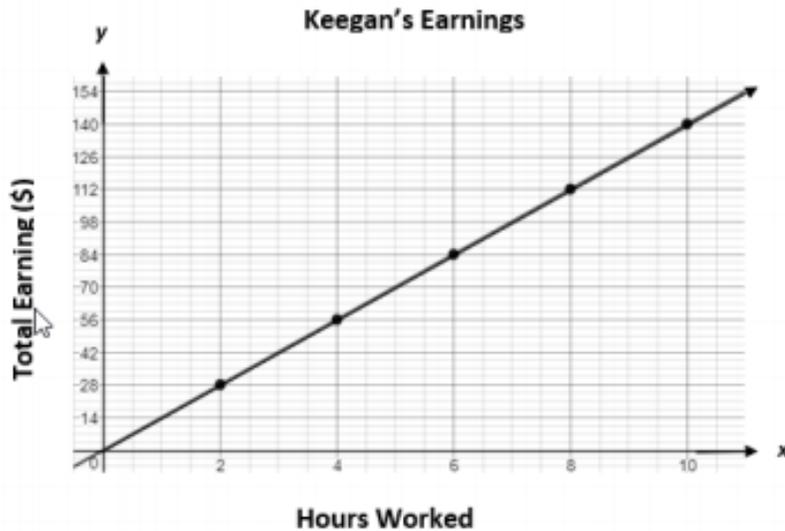
A. $\frac{1}{2}$

B. $\frac{3}{4}$

C. $1\frac{1}{3}$

D. $1\frac{1}{2}$

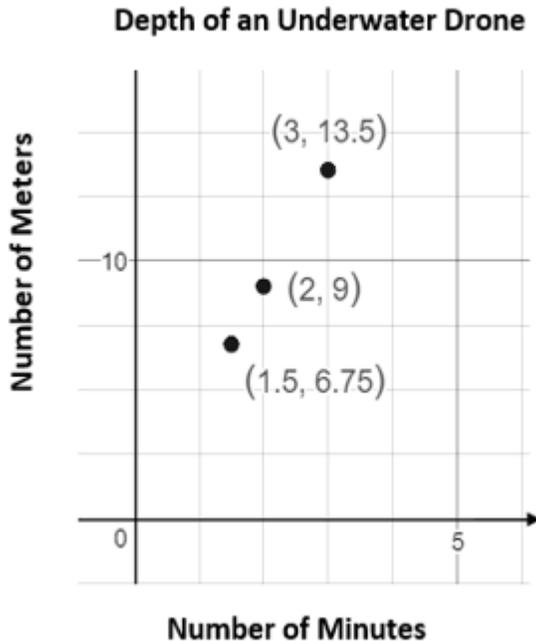
Keegan works for an emergency response service. The graph below shows the amount of money that she earns when working different numbers of hours. What is the constant of proportionality that represents Keegan's hourly pay rate?



14

ITEM 30

An oil rig off of the coast of Louisiana uses an underwater drone to regularly inspect the pipelines. The points plotted on the given coordinate plane show a proportional relationship between the drone's depth, in meters, and the time, in minutes, since it was submerged.



Part A

Determine the constant of proportionality for relationship between the depth of the drone and its time underwater. Explain how the plotted points can support your answer.

Part B

Use the constant of proportionality for this situation to determine the point on the coordinate plane that represents the unit rate. Explain the meaning of this unit rate in terms of this situation.

Enter your constant of proportionality and your explanation for Part A in the box below. Enter the point that represents the unit rate and your explanation of the meaning of the unit rate for Part B below. Be sure to label each part.

Part A: $y = 4.5x$ ($6.75/1.5=9/2=13.5/3$)

Part B: $x=1$, $y=4.5$ the point is $(1, 4.5)$. It represents the drone's depth increases 4.5 meters per minutes.

ITEM 31

The table represents a proportional relationship between the values of x and y .

x	y
2	5
4	10
6	15

What is the value of the constant of proportionality for the data in the table?

A. $\frac{2}{5}$

B. $\frac{5}{2}$

C. 3

D. 5

ITEM 32

The table represents a proportional relationship between the values of x and y .

x	y
3	6
5	10
7	14

What is the value of the constant of proportionality for the data in the table?

A. $\frac{1}{2}$

B. 1

C. 2

D. 4

ITEM 33

Shiloh and her sister have a small business where they make and sell pralines. The cost of their pralines is proportional to the weight of the pralines. A 6-ounce bag costs \$13.50. Select the correct unit rate for this situation.

- A. \$0.44 per ounce
- B. \$0.81 per ounce
- C. \$2.25 per ounce**
- D. \$7.50 per ounce

ITEM 34

Jory's motorcycle travels at a constant rate of 18 miles in 45 minutes. What is the rate, in miles per hour, that Jory is traveling?

A. 13

B. 18

C. 24

D. 26

ITEM 35

The amount Josh charges to mow a lawn is proportional to the time that it takes him to mow the lawn. For a lawn that takes 2.5 hours to mow, Josh charges the customer \$57.50.

Which equation models the amount of d dollars that Josh charges when it takes him h hours to mow the lawn?

A. $h = 23d$

B. $d = 23h$

C. $d = 57.50h$

D. $d = 143.75h$

ITEM 36

On May 6, 2018, a minor earthquake in the Gulf of Mexico sent shockwaves to Grand Isle. It took 2.5 minutes for a wave to travel 120 miles from the epicenter of the earthquake. Write an equation that represents the relationship between m , the number of minutes, and d , the total distance the wave traveled.

Enter your equation in the space provided.

$d=48m$

ITEM 37

The table shows the number of cups of uncooked grits, x , that can be used to make a given number of servings of cooked grits, y .

Cups uncooked grits, x	Servings cooked grits, y
$\frac{1}{4}$	1
$\frac{3}{4}$	3
$1\frac{1}{2}$	6

Based on the table, select the equation that shows the relationship between the number of servings of grits, y , and the number of cups of uncooked grits, x .

A. $y = \frac{1}{4}x$

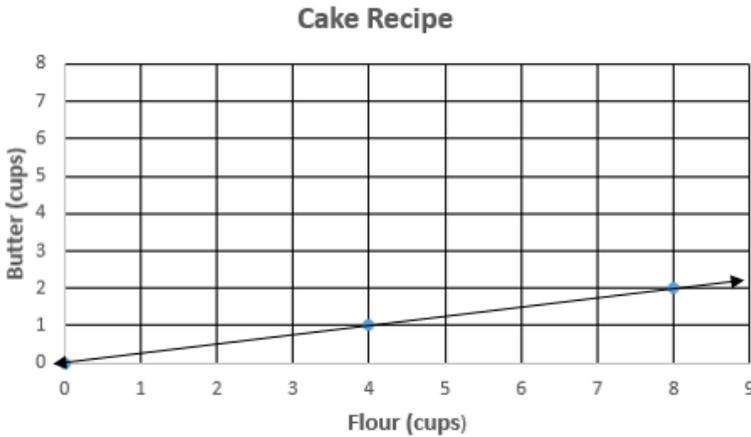
B. $y = \frac{3}{4}x$

C. $y = 3x$

D. $y = 4x$

ITEM 38

Faith bakes cakes using her grandmother's secret recipe. The only part of the recipe that Faith will share is the ratio of flour to butter. The graph shows the numbers of cups of butter that must be mixed with different numbers of cups of flour.



Based on the graph, write an equation that shows the relationship between the number of cups of butter, y , and the number of cups of flour, x , that is required by Faith's grandmother's secret cake recipe. Enter your equation below.

$y = 1/4x$
 $y = .25x$

ITEM 39

James uses 4 cups of lemon soda and 16 cups of fruit juices to make a punch. To represent the relationship between the number of cups of soda, s , and the number of cups of fruit juice, j , needed to make the same punch, James wrote the equation $s = \underline{\hspace{1cm}} j$. What number should be placed in the blank?

Enter your answer below.

0.25

0.250

.25

.250

ITEM 40

The table shows the number of quarts of blue paint, b , must be mixed with different numbers of quarts of yellow paint, y , to make a certain shade of green paint.

Green Paint Mixture	
Quarts yellow paint, y	Quarts blue paint, b
$\frac{3}{4}$	$\frac{1}{2}$
2	$1\frac{1}{3}$
3	2

Based on the table, write an equation that shows the relationship between the number of quarts of yellow paint, y , and the number of quarts of blue paint, b , needed to make the shade of green paint.

E. $b = 0.375y$

F. $b = 0.6y$

G. $b = 0.8\bar{3}y$

H. $b = 1.5y$

ITEM 41

Miliyah drives her hybrid car for 120 miles and uses 2.5 gallons of gasoline. The graph shows the relationship between the number of miles she drives, y , and the number of gallons of gasoline in her car's tank, x .

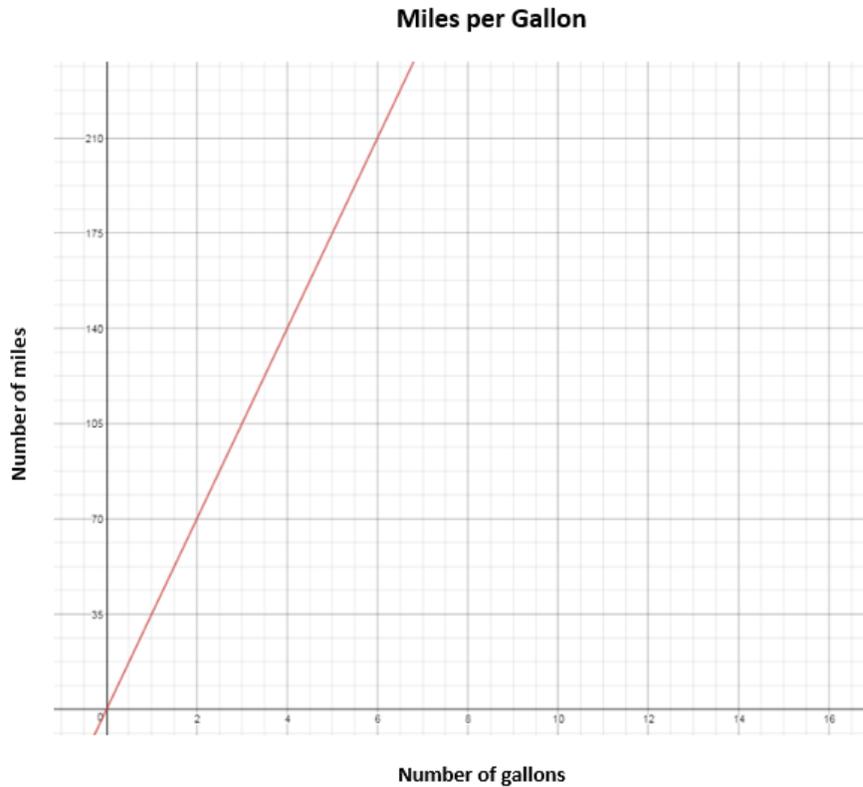


Which point represents the number of miles that her car travels per gallon?

- A. (0, 0)
- B. (1, 2.5)
- C. (1, 48)**
- D. (2.5, 120)

ITEM 42

The graph shows the number of miles that a particular car travels per different numbers of gallons of gasoline.



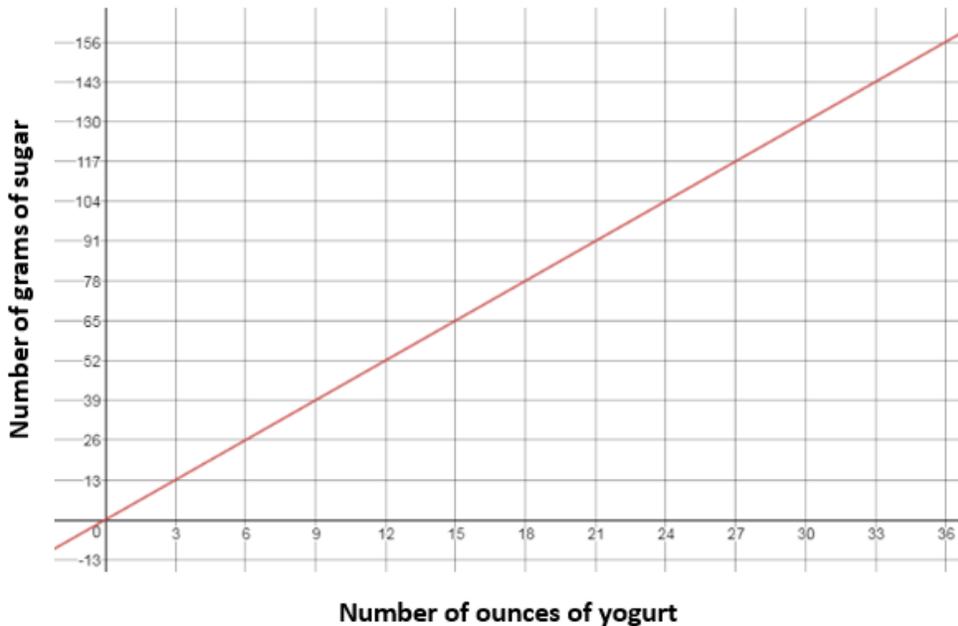
Select **three** statements that are true about the graph.

- A. The point (0, 0) represents that the car travels 0 miles on 0 gallons of gasoline.
- B. The point (2, 70) represents that the car uses 70 gallons of gasoline to travel 2 miles.
- C. The point (6, 210) represents that the car travels 210 miles on 6 gallons of gasoline.
- D. The point (6, 210) represents that the car uses 210 gallons to travel 6 miles.
- E. The point (2, 70) represents the unit rate.
- F. The point (1, 35) represents the unit rate.

ITEM 43

The graph shows the amount of sugar contained in a certain brand of strawberry yogurt.

Strawberry Yogurt

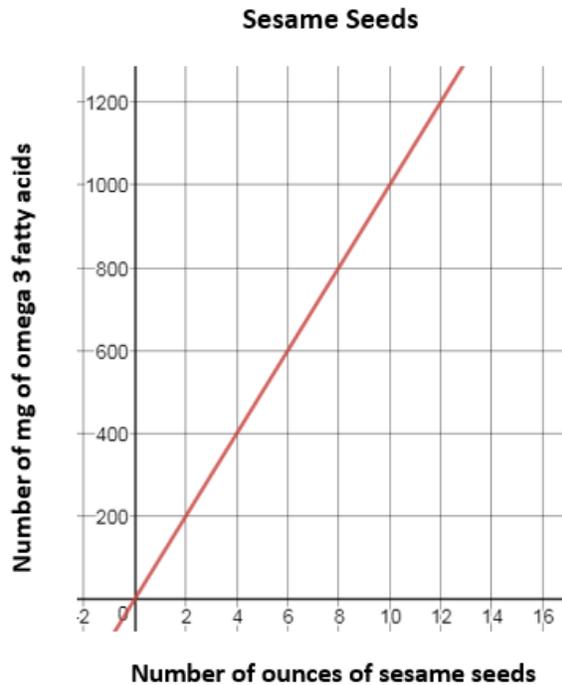


Select **three** statements that are true about the graph.

- A. The point (3, 13) represents that 13 ounces of yogurt contains 3 grams of sugar.
- B. The point (3, 13) represents that 3 ounces of yogurt contains 13 grams of sugar.
- C. The point (3, 13) represents the unit rate.
- D. The point (1, 4) represents the unit rate.
- E. There are 9 grams of sugar in 39 ounces of yogurt.
- F. The point (0, 0) represents that there are 0 grams sugar for every 0 ounces of yogurt.

ITEM 44

The graph shows the amount of omega 3 fatty acids contained in an amount of sesame seeds.

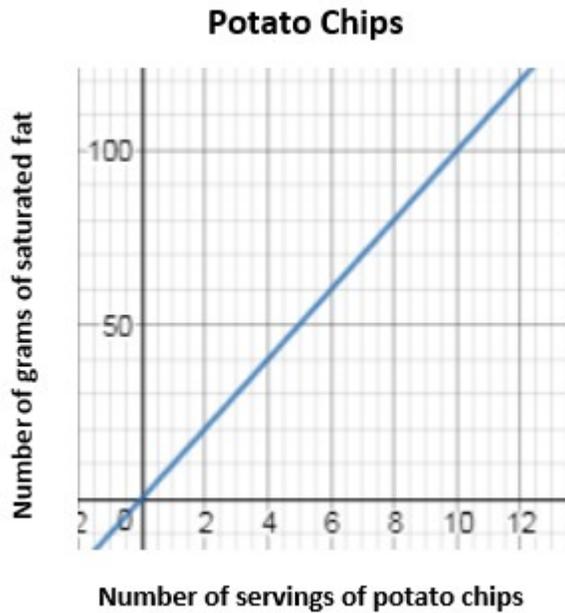


Select the statement that correctly describes the meaning of (8, 800) on the graph.

- A. The 800 represents the number of ounces of sesame seeds for every 8 ounces of sesame seeds.
- B. The 800 represents the number of milligrams of omega 3 fatty acids for every 8 ounces of sesame seeds.
- C. The 800 represents the number of ounces of sesame seeds for every 8 milligrams of omega 3 fatty acids.
- D. The 800 represents the number of milligrams of omega 3 fatty acids for every 8 milligrams of omega 3 fatty acids.

ITEM 45

The graph shows the amount of saturated fat contained in a certain brand of potato chips.

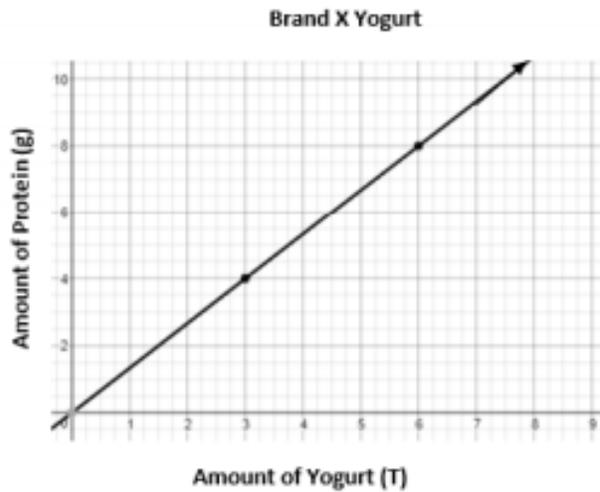


Select the statement that correctly describes the meaning of (4, 40) on the graph.

- A. The 40 represents the number of grams of saturated fat for every 4 grams of saturated fat.
- B. The 40 represents the number of servings of potato chips for every 4 grams of saturated fat.
- C. The 40 represents the number of grams of saturated fat for every 4 servings of potato chips.**
- D. The 40 represents the number of servings of potato chips for every 4 servings of potato chips.

ITEM 46

The graph shows the amount of protein contained in a certain brand of yogurt.

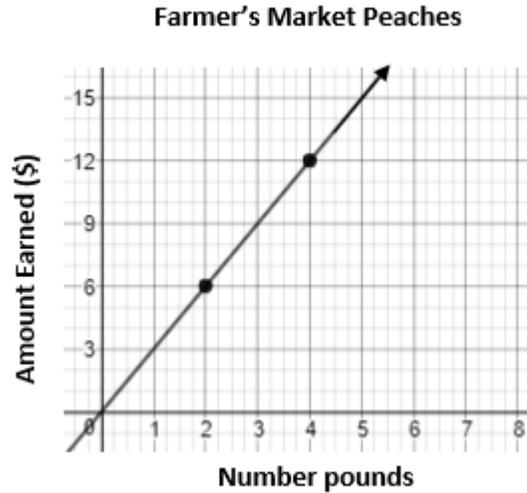


Which statement describes the meaning of the point $(1, 1\frac{1}{3})$ on the graph?

- A. There is 1 gram of protein per $2\frac{1}{3}$ tablespoons of yogurt.
- B. There is 1 tablespoon of yogurt per $2\frac{1}{3}$ grams of protein.
- C. There is 1 gram of protein per $1\frac{1}{3}$ tablespoons of yogurt.
- D. **There are** $1\frac{1}{3}$ grams of protein per tablespoon of yogurt.

ITEM 47

At the farmer's market Destiny buys 4.5 pounds of peaches for \$13.50. The graph shows the relationship between the number of pounds of peaches that she buys, x , and the total cost of the peaches, y .

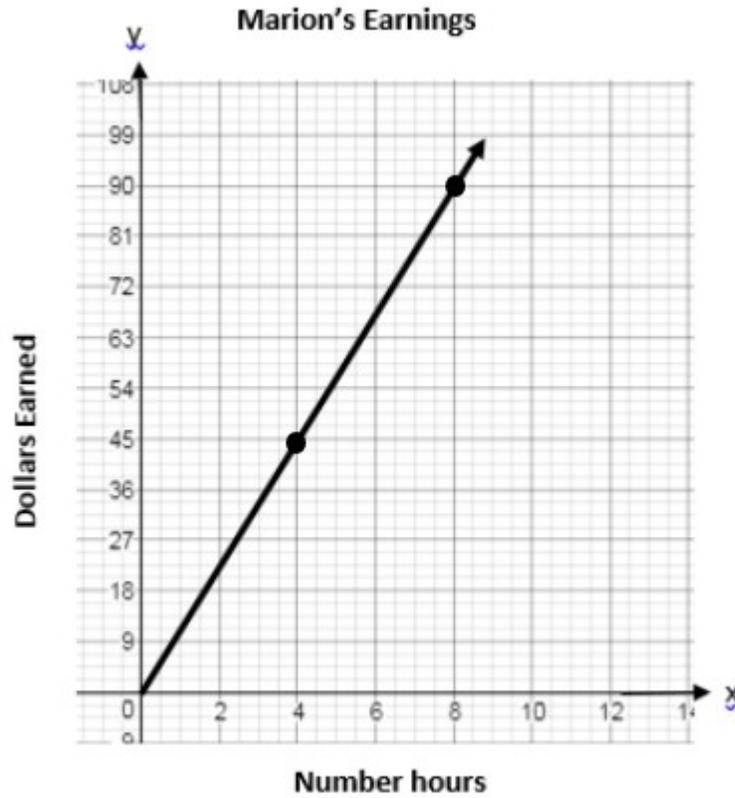


Which point represents the unit rate for the cost of the peaches?

- A. (3, 1)
- B. (1, 3)**
- C. (2, 6)
- D. (4.5, 13.5)

ITEM 48

Marion works for 7 hours and earns \$78.75. The graph shows the relationship between the number of hours Marion works, x , and the total amount of money that he earns, y .

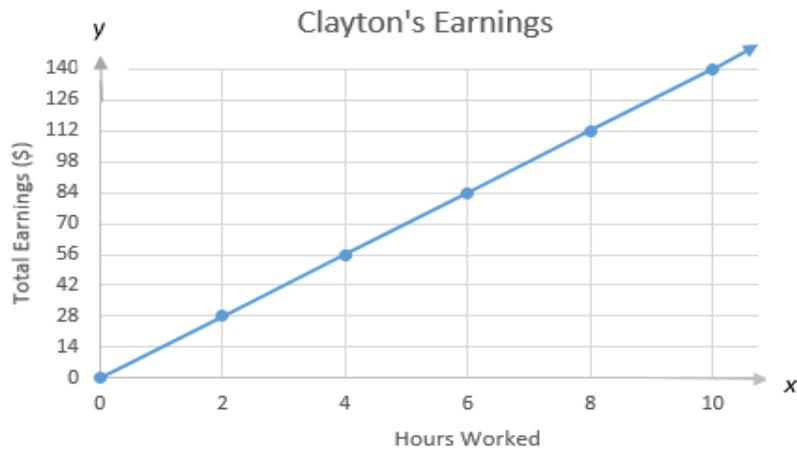


Which point on the graph represents the number of dollars that Marion makes per hour?

- A. (0,0)
- B. (1, 11.25)
- C. (4, 45)
- D. (11.25, 1)

ITEM 49

Clayton works at a seafood restaurant. He works for 8 hours and earns \$112. The graph shows the relationship between the number of hours Clayton works, x , and the total amount of money he earns, y .



Which point represents the number of dollars Clayton makes per hour?

- A. (1,8)
- B. (1,14)**
- C. (2, 28)
- D. (8, 112)

Ratios and Proportional Relationships

7.RP.A.03

Items 50-82

ITEM 50

Carl is a biologist studying different types of mammals. He finds that in one valley, there are 15 plant-eating mammals for every 2 meat-eating mammals. The total population of mammals in the valley is about 2,900. Which number is the best estimate of the population of meat-eating mammals in the valley?

- A. 170
- B. 340**
- C. 1,450
- D. 2,560

ITEM 51

Alan is making a salad dressing. For every 2 ounces of vinegar he uses, he also uses 3 ounces of olive oil . If Alan uses 12 ounces of vinegar, how many ounces of olive oil does he use?

- A. 8 ounces
- B. 12 ounces
- C. 15 ounces
- D. 18 ounces**

ITEM 52

Cheryl lived in a hotel on an extended business trip. The room cost her company \$84 per day and the total cost was \$1,176. How many weeks did Cheryl stay in the hotel?

A. 2 weeks

B. 3 weeks

C. 12 weeks

D. 14 weeks

ITEM 53

Last year, half the graduates from Harold's Clown College became circus clowns. Another 60 graduates became rodeo clowns. The rest of the graduates became mimes.



Circus Clown



Rodeo Clown



Mime

Harold's Clown College had 200 graduates last year. What percentage were mimes?

A. 20%

B. 40%

C. 60%

D. 100%

ITEM 54

A city has a state sales tax of 6.25% and a local sales tax of 2.25%. What is the total sales tax on a video game that costs \$52.00?

- A. \$1.17
- B. \$2.08
- C. \$3.25
- D. \$4.42**

ITEM 55

The first time that Arnold ran for mayor in a small town, he received 5% of the votes. This year, when Arnold ran for mayor again, he received 4 times as many votes as he did when he ran the first time. There were 360 total votes in each election. How many votes did Arnold receive this year?

A. 18

B. 20

C. 72

D. 90

ITEM 56

Carlos plans to buy a used car that costs \$8,000. The sales tax is 4%. What is the total amount Carlos will pay for the car, including sales tax?

- A. \$8,004
- B. \$8,032
- C. \$8,320
- D. \$8,400

ITEM 57

An electronics store paid \$51.94 for a DVD player. To make a profit, the store charges the customer 154% of their cost. What does the store charge customers for the DVD player?

- A. \$28.05
- B. \$33.73
- C. \$79.99**
- D. \$96.19

ITEM 58

Stacy finds a shirt that costs \$43.00 on sale for 30% off the regular price. How much will the shirt cost before tax?

A. \$12.90

B. \$13.00

C. \$30.10

D. \$42.70

ITEM 59

A skateboard that costs \$53 was put on sale at a 25% discount. What was the sale price of the skateboard?

A. \$13.25

B. \$26.50

C. \$39.75

D. \$66.25

ITEM 60

Marjorie uses $2\frac{1}{2}$ scoop of sweet tea mix to make 8 ounces of sweet tea. Marjorie wants to make 40 ounces of sweet tea. How many scoops of sweet tea mix should she use?

A. 2

B. $2\frac{1}{2}$

C. 4

D. $5\frac{1}{2}$

ITEM 61

Korbin attended the annual children's parade. Every float had nine people throwing candy from it. At this parade he noticed that he collected $\frac{1}{3}$ of a pound of candy for every $2\frac{4}{9}$ floats that passed by. The total parade included 44 floats. To the nearest pound, how much candy should Korbin expect to collect by the end of the parade?

- A. 3 lbs.
- B. 6 lbs.**
- C. 18 lbs.
- D. 36 lbs.

ITEM 62

Madison walks for exercise. She calculates that she walks $\frac{1}{2}$ of a mile in $\frac{1}{6}$ of an hour. At this rate, how long will it take her to walk six miles?

- A. 1 hour
- B. 2 hours**
- C. 3 hours
- D. 18 hours

ITEM 63

Heather bought a new laptop for \$650.00. The store is offering a discount to the price in the form of a 15% rebate. How much will Heather pay for the new laptop after the rebate?

- A. \$97.50
- B. \$325.00
- C. \$552.50**
- D. \$635.00

ITEM 64

In Ms. Morales's class, the ratio of boys to girls is 3:7. The class sizes at Ms. Morales's school range from 22 to 34 students per class. What is the total number of students in Ms. Morales's class?

- A. 21 students
- B. 24 students
- C. 28 students
- D. 30 students**

ITEM 65

Megan uses $\frac{2}{3}$ cup of almonds to make 4 cups of trail mix. Using this same ratio, how many cups of almonds would Megan need to make 9 cups of trail mix?

A. $\frac{8}{27}$ cup

B. 1.35 cups

C. $1\frac{1}{2}$ cups

D. 1.575 cups

ITEM 66

The United States Geological Survey suggests that loss of wetlands on the Louisiana coast occurs at a constant rate. For the time period of 1932 to 2016, the USGS has reported a net change of -4,833 square kilometers for the land area of Louisiana. If Louisiana had an estimated land area of 19,332 square kilometers in 1932, what is the percent of decrease in its land area between 1932 and 2016?

- A. 3% decrease
- B. 25% decrease**
- C. 75% decrease
- D. 125% decrease

ITEM 67

A factory makes phone cases using 8 cutting machines. Each machine can cut 4 cases every 15 seconds. If 25% of the machines are removed for maintenance, then how many fewer cases per minute will the remaining machines cut when compared to the number of cases per minute all 8 machines cut?

Enter only the number that represents your answer below.

32

ITEM 68

Noah's family gave him \$650 for his high school graduation. He deposited this money into a savings account that earned 5.5% annual interest. He left the money in the account for 2 years before withdrawing it. How much interest did his account earn if interest was accrued each month?

- A. \$59.09
- B. \$35.75
- C. \$71.50**
- D. \$118.18

ITEM 69

Nakiya deposits \$1300 into an account that earns 3.12% interest at the end of each month. Her goal is to leave the money in the account until the balance is greater than \$1500. How many years will it take for Nakiya to reach her savings goal?

Enter your answer below.

5
5.0

ITEM 70

A student is shopping for a dress for the school dance. She finds what she wanted in the clearance section. A sign in the clearance section explains that everything found here is 40% off of the original price. When she gets to the checkout register, she is pleased to see a second sign.



If the dress was originally priced at \$125, how much will the student pay after the discounts have been applied?

- A. \$12.50
- B. \$25.00
- C. \$35.00
- D. \$37.50**

ITEM 71

A pedometer is a device that estimates the distance that a person walks by recording the number of steps taken. Chloe walked exactly 0.5 mile around an official track. Her pedometer showed a distance of 0.58 miles. Calculate the percent error for Chloe's pedometer.

- A. 0.08%
- B. 0.16%
- C. 8%
- D. 16%**

ITEM 72

Jaylynn selected a weight that was stamped 2 grams and placed it on the digital scale. The digital scale recorded the mass as 2.12 grams. Assume that the scale is the approximate value. Calculate the percent error for the scale.

Enter your answer in percent form below.

6%

ITEM 73

The size of a screen is determined by the length of its diagonal. Each student in Mrs. W's math class was asked to measure the diagonal of his or her Chromebook screen. Javon's measurement was $13\frac{7}{8}$ inches. The computer's actual diagonal length is 14 inches. Calculate the percent error for Javon's measurement.

A. 0.125%

B. 0.893%

C. 0.991%

D. 12.50%

ITEM 74

The Louisiana Department of Wildlife and Fisheries cannot provide an exact number of black bears in the state but estimates the number to be between 700 and 1000. If the exact number of bears is 850, what is the percent error for the estimated number of black bears in Louisiana?

- A. 3%
- B. 30%
- C. 35%**
- D. 300%

ITEM 75

In 2010 the US Census Bureau reported that the population of the state of Louisiana was 4,533,372. In 2017 the US Census Bureau estimated that the population of Louisiana was 4,684,333. What is the percent of increase for the population of Louisiana from 2010 to 2017?

A. 0.96%

B. 1.03%

C. 3.3%

D. 97%

ITEM 76

In December, Antonio's grade point average for math class was a 3.4. In May, his average had dropped to a 3.0. What is the percent of decrease for Antonio's math grade?

- A. 0.4%
- B. 11.8%**
- C. 13.3%
- D. 40%

ITEM 77

Danny works at the hunting and fishing supply store. At the end of each month he earns a commission on all of his sales for that month.

He earns a 2.5% commission on his first \$4000 in sales.

He earns a 7.5% commission on any amount of sales beyond \$4000.

Last month he worked hard and earned \$1000 commission. How much, in dollars, did he have in sales last month?

A. \$8,000

B. \$10,000

C. \$16,000

D. \$20,000

ITEM 78

Macy works for a clothing retailer. She earns a 3% commission on her first \$1500 in sales, and she earns a $5\frac{1}{2}$ % commission on her amount of sales greater than \$1500. Last month Macy had \$2000 in sales. What amount of commission, in dollars, did she earn?

A. \$60.00

B. \$72.50

C. \$127.50

D. \$170.00

ITEM 79

In 1940 you could buy a soda for 5 cents. Today the average cost of the same size soda is \$1.25. What is the percent of increase in the cost of a soda?

- A. 1.2%
- B. 24%
- C. 120%
- D. 2400%**

ITEM 80

A bison at the zoo is fed $5\frac{1}{2}$ pounds of alfalfa hay each day. After one month, his caretaker increases this amount to $8\frac{1}{4}$ pounds of hay per day. What is the percent of increase in the amount of hay that the bison eats each day?

A. 2.75%

B. 50%

C. 150%

D. 275%

ITEM 81

Each day a tiger needs to eat an amount of food that is equivalent to 6% of his body weight. Of this amount, 40% must be fat and 60% must be protein. If the tiger weighs 450 pounds, about how many pounds of protein should he consume each day? Round your answer to the nearest pound.

- A. 7 pounds
- B. 11 pounds
- C. 16 pounds**
- D. 27 pounds

ITEM 82

A dairy has 4 machines that each fill 1-liter bottles with milk. Each machine has 6 fill heads and completes 5 cycles per minute. How many 1-liter bottles can all 4 machines fill every hour?

Enter your answer below.

7200

The Number System

7.NS.A.01

Items 83- 126

ITEM 83

In which of these situations would the answer to the question be 5?

- A. Jacob drove 8 miles to the grocery store, then drove back 3 miles to his grandmother's house.

How many miles did Jacob drive?

- B. Lindsay started at her house and ran 2.5 miles. She finished running where she started at her house. In miles, how far did Lindsay run?

- C. Tom flew 39 miles north from the runway. He turned around and flew 34 miles south back to the runway and landed. How far away, in miles, from the runway is Tom?

- D. The wind blew a sailboat 6 miles off course. The captain steers the boat in the right direction to get back on course. How far off course in miles is the boat?

ITEM 84

Which of the following scenarios could be modeled with opposite quantities combining to equal zero?

A. A circle's radius is half the diameter, and the diameter is twice the radius.

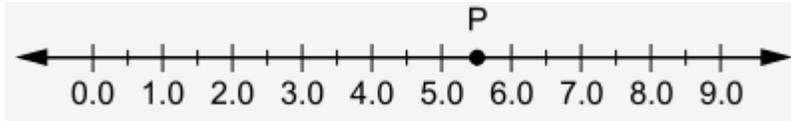
B. Mark repays Bob \$5.00 that he borrowed last week.

C. Martin ran 3 miles in $\frac{1}{3}$ of an hour.

D. The area of a square is 9 and has a side length of 3.

ITEM 85

Point P is graphed on the number line below.



Where on the number line would point S be located if point S represents the sum of the value of point P and $3\frac{3}{8}$?

- A. $2\frac{1}{8}$ units to the right of point P
- B. $2\frac{1}{8}$ units to the left of point P
- C. $3\frac{3}{8}$ units to the right of point P**
- D. $3\frac{3}{8}$ units to the left of point P

ITEM 86

Which context can be modeled by the sum $20 + (-12)$?

- A. The total amount of money Jamie has if she has \$12 in savings and then earned \$20 babysitting.
- B. The difference in the average high and average low temperatures of a city if the average high temperature is 20C and the average low temperature is 12C below zero.
- C. The total number of yards gained by the football team if the team gained 20 yards on the first play and lost 12 yards on the second play.
- D. The difference between the highest and lowest points on a hiking trail if the lowest point is 20 feet below sea level and the highest point is 12 feet above sea level.

ITEM 87

Which expression is equivalent to $4.35 - 5.5$?

A. $4.35 + (-5.5)$

B. $5.5 - 4.35$

C. $4.35 + 5.5$

D. $4.35 - (-5.5)$

ITEM 88

At 9:00 A.M. the temperature was -7° C. At 4:00 P.M. the temperature was the same number of degrees above 0° C as the 9:00 A.M. temperature was below 0° C. Which expression represents the number of degrees between the 9:00 A.M. temperature and the 4:00 P.M. temperature?

- A. $0 - 7$
- B. $-7 + 7$
- C. $7 + 0$
- D. $7 + 7$**

ITEM 89

What is the distance between -24 and -16.5 on a number line?

- A. -8.5 units
- B. -7.5 units
- C. 7.5 units**
- D. 8.5 units

ITEM 90

Add.

$$-\frac{6}{15} + \frac{10}{22}$$

A. $-\frac{47}{55}$

B. $-\frac{16}{37}$

C. $\frac{3}{55}$

D. $\frac{4}{7}$

ITEM 91

In which of these situations would the answer to the question be zero?

- A. Keegan left the public library and walked 3 blocks north. She realized that she forgot her library card so she turned around and walked 3 blocks south to return to the library. How many total blocks did she walk?
- B. Aysha lost 5 quarters that fell out of her pocket, then she found 5 pennies on the ground. What is the net change of her total amount of money?
- C. In chemistry class, London is recording the temperature of a substance. The initial temperature recording of the substance was -1 , then the temperature increased to 0 . What was the total temperature change of the substance?
- D. In the football game, Coby ran the ball for a gain of 8 yards, then on the next play Coby was tackled behind the line of scrimmage for a loss of 8 yards. What was his total yardage on both plays?

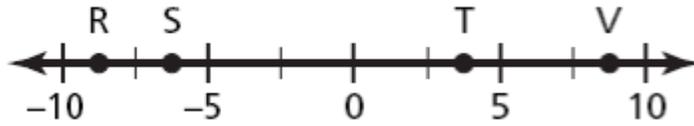
ITEM 92

For which temperature recording is there a net change of 0° Celsius?

- A. The temperature decreased by 4° Celsius then increased by 4° Celsius.
- B. The temperature decreased by 2° Celsius then decreased 2° Celsius.
- C. The temperature increased by 0° Celsius then decreased 2° Celsius.
- D. The temperature decreased by 23° Celsius then increased by 32° Celsius.

ITEM 93

Use the given number line to answer the question.



Which two points are opposites that will combine to make zero?

- A. Point R and Point S
- B. Point R and Point V**
- C. Point R and Point T
- D. Point S and Point V

ITEM 94

Cade opened a savings account with an initial deposit of \$350. After which transactions will the balance of his savings account be the same as his initial deposit?

- A. a deposit of \$120 followed by a withdrawal of \$100
- B. a withdrawal of \$98 followed by a deposit of \$89
- C. a withdrawal of \$150 followed by another withdrawal of \$200
- D. a deposit of \$75 followed by a withdrawal of \$75**

ITEM 95

A positive value describes altitude above sea level, and a negative value describes altitude below sea level. London and Ayanna are hiking Driskill Mountain in Bienville Parish. Which situation results in their stopping at an altitude of 0 feet?

- A. They start at -50 feet and decrease altitude by 50 feet.
- B. They start at 0 feet and decrease altitude by 50 feet.
- C. They start at 50 feet and increase altitude by 50 feet.
- D. They start at 50 feet and decrease altitude by 50 feet.

ITEM 96

A positive value describes altitude above sea level, and a negative value describes altitude below sea level. Josh and Joe are hiking in the Tunica Hills in West Feliciana Parish. Which situation results in their stopping at an altitude of 0 feet?

- A. They start at -20 feet and increase altitude by 20 feet.
- B. They start at -20 feet and decrease altitude by 20 feet.
- C. They start at 20 feet and increase altitude by 20 feet.
- D. They start at 0 feet then decrease altitude by 20 feet.

ITEM 97

In which situation would the answer to the question be zero?

- A. During a board game, a player accrues a debt of 100 coins then borrows 100 more coins. How many total coins does he owe?
- B. An underwater welder repairing pipelines has an elevation of -12 meters. He dives down 12 meters. What is his new elevation in meters?
- C. An island airport is 450 feet above sea level. A small plane takes off, rises to an altitude of 3,000 feet to cruise around the island, then lands at the same airport 450 feet above sea level. What is the total change in altitude for the airplane?
- D. A football team loses 6 yards on first down and loses 6 yards on second down. What is the total yardage for the two plays?

ITEM 98

In which of these situations would the answer to the question be zero?

- A. Robert borrowed \$6 from his cousin, then he spent \$6 on snacks. How much does Robert owe his cousin?
- B. Noah's bank account shows a debit of \$10 and a credit of \$10. What is his ending account balance?**
- C. Calvin cannonballed into the deep-end of a swimming pool, allowed his body to sink 12 feet, then pushed off the bottom to swim 12 feet straight up to the surface. How many feet did he swim?
- D. The low temperature one day was -8. The high temperature that same day was 8. What is the difference between these low and high temperatures?

ITEM 99

In which situation would the answer to the question be zero?

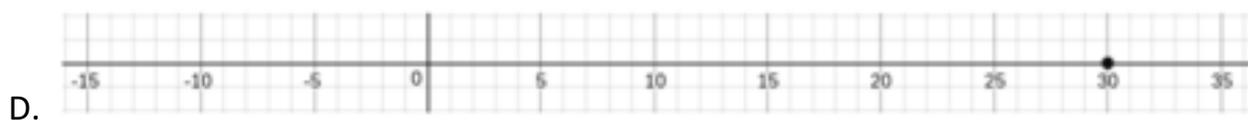
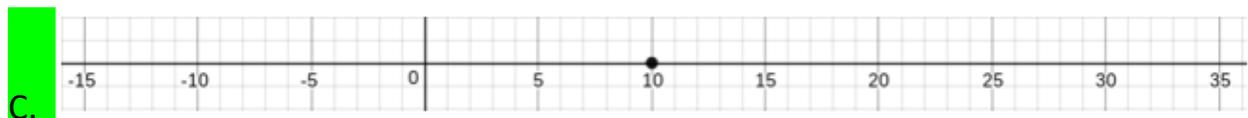
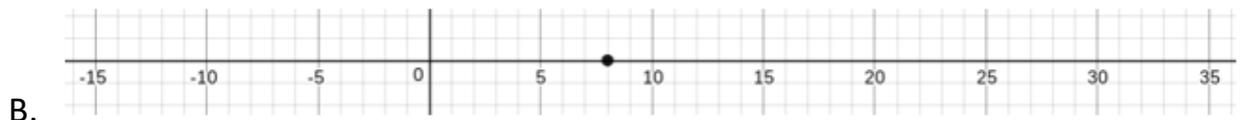
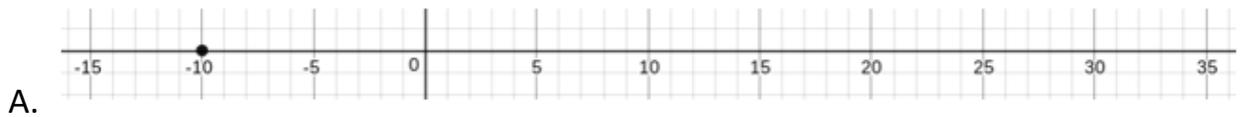
- A. A submarine has an altitude of -500 feet, and it dives down 500 feet. What is the submarine's new altitude in feet?
- B. Jesse left his friend's house and walked $\frac{3}{4}$ miles due east. When he realized that he left his phone at his friend's house, he turned around and walked the same distance in the opposite direction. What total distance, in miles, did Jesse walk?
- C. In Fairbanks, Alaska, the low temperature in the morning was -2° Celsius. By the afternoon the high temperature was 2° Celsius. What is the difference between the low and high temperatures?
- D. Caleb checked his bank account. He noticed that he had a \$25 debit and a \$25 credit. By what dollar amount does Caleb's bank account change after these two transactions?

Item 100

Ryan is researching the climate of the Eurasian steppe. On the first day of his research he records the noon time temperature as 20. Over the course of the next several days he records the cumulative temperature change.

- The change in temperature from day 1 to day 2 was -8.
- The change in temperature from day 2 to day 3 was 1.
- The change in temperature from day 3 to day 4 was -3.

Which number line shows the point that represents the temperature, in, at noon on the fourth day of his research?



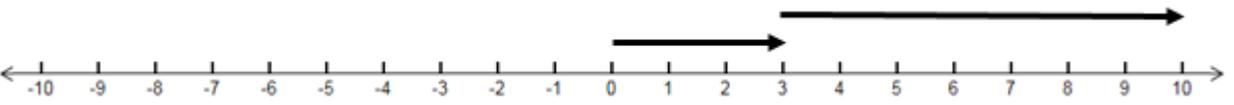
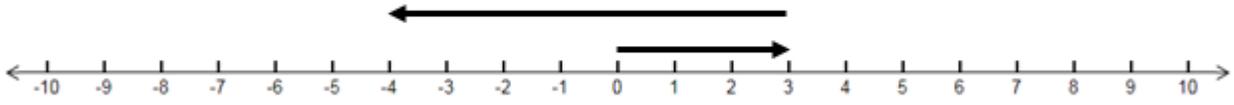
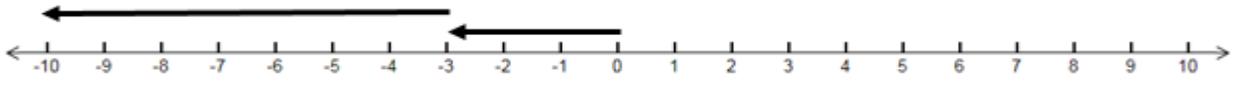
ITEM 101

For a science project, Erick was monitoring the temperature outside in degrees Fahrenheit ($^{\circ}\text{F}$) and wrote the expression $92 + (-4) - 2$. Which statement describes this expression?

- A. The temperature started at 92°F and increased by 4°F . Then the temperature decreased by 2°F .
- B. The temperature started at 92°F and increased by 4°F . Then the temperature increased by 2°F .
- C. The temperature started at 92°F and decreased by 4°F . Then the temperature decreased by 2°F .**
- D. The temperature started at 92°F and decreased by 4°F . Then the temperature increased by 2°F .

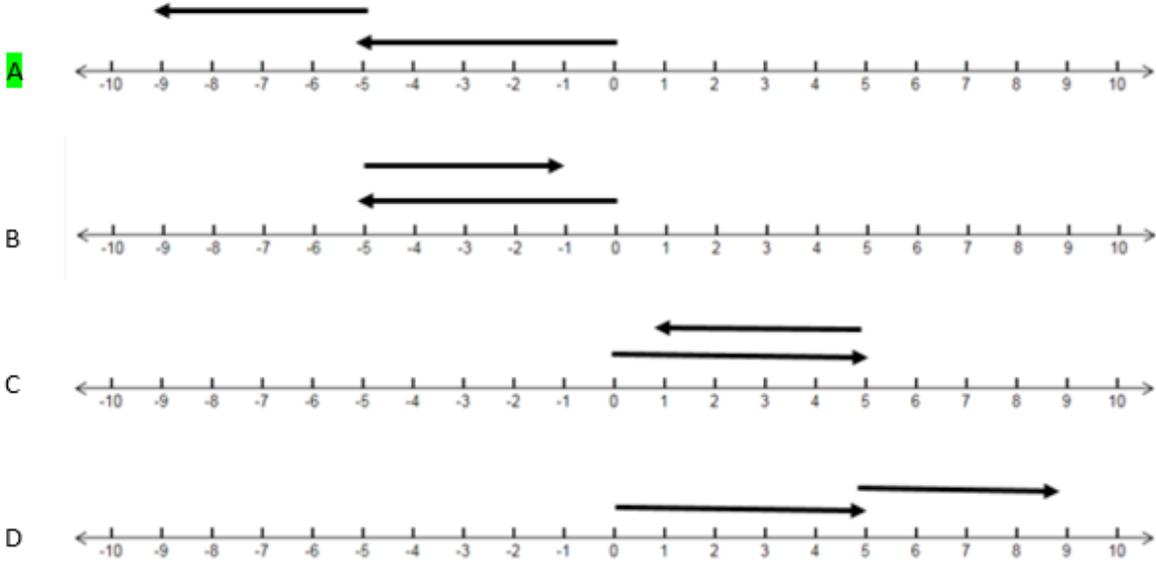
ITEM 102

Which number line demonstrates how to find the sum of -3 and 7 ?

- A. 
- B. 
- C. 
- D. 

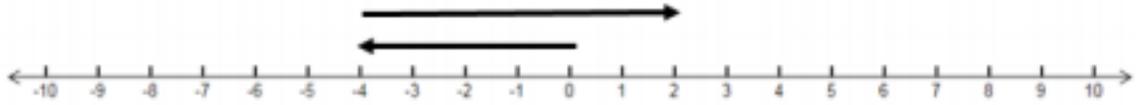
ITEM 103

Which number line demonstrates how to find the sum of -5 and -4 ?

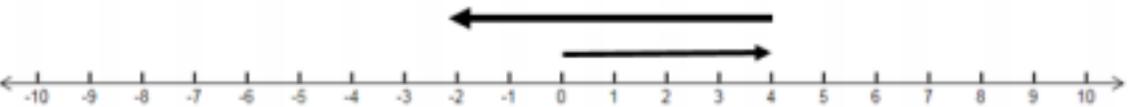


ITEM 104

Which number line demonstrates how to find the sum of 4 and -6?



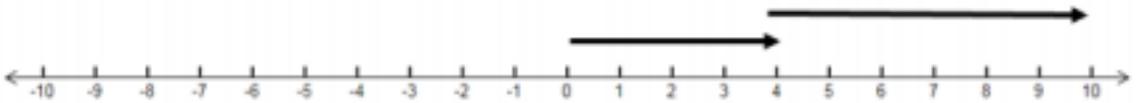
A.



B.



C.



D.

ITEM 105

Kylon was keeping track of the total yardage for three downs in a football game. He modeled the situation using the expression $9 + (-3) - 2$.

Which statement best describes this expression?

- A. The team gained 9 yards on first down, gained three yards on second down, and lost two yards on third down.
- B. The team gained 9 yards on first down, lost three yards on second down, and lost two yards on third down.
- C. The team gained 9 yards on first down, gained three yards on second down, and gained two yards on third down.
- D. The team gained 9 yards on first down, lost three yards on second down, and gained two yards on third down.

ITEM 106

Karli is monitoring the temperature in degrees Fahrenheit outside of her house. She wrote the expression $91 + (-2) + 4$.

Which statement best describes this expression?

- A. The temperature started at 91 and increased by 2 . Then, the temperature increased by 4 .
- B. The temperature started at 91 and increased by 2 . Then, the temperature decreased by 4 .
- C. The temperature started at 91 and decreased by 2 . Then, the temperature increased by 4 .
- D. The temperature started at 91 and decreased by 2 . Then, the temperature decreased by 4 .

ITEM 107

Consider the equation: $-7 - x = n$

- What must be true about any value of x if n is a negative number?
- Explain your answer.
- Include an example with numbers to support your explanation.

Enter your answer, your explanation, and your example below.

$-7-x < 0$
 $x > -7$

ITEM 108

Tides are measured by their heights above or below sea level. The table shows the heights, measured in feet, of high and low tides and the differences between these heights at each of three locations along the Louisiana coast. One piece of data is missing from the table.

Louisiana Tides			
Location on Louisiana coast	High tide (ft)	Low tide (ft)	Difference between high & low tide (ft)
Marsh Island	?	-0.3	2.4
Cocodrie	1.3	-0.1	1.4
Delacroix Island	1.2	-0.2	1.4

Part A

Find the height of the high tide for Marsh Island. Explain how you found your answer.

Part B

The tides are measured at a fourth location, Raccoon Point in Caillou Bay. The mean of the low tide values at Marsh Island, Cocodrie, Delacroix Island, and Raccoon Point is -0.6 feet. What is the height of the low tide at Raccoon Point on Caillou Bay? Explain how you found your answer.

Enter your answers and explanations below. Be sure to label each part.

Part A:

x, the height of the high tide for Marsh Island.

$$x - (-0.3) = 2.4$$

$$x = 2.1$$

Part B:

y, the height of the low tide at Raccoon Point on Caillou Bay.

$$[-0.3 + (-0.1) + (-0.2) + y] / 2 = -0.6$$

$$y = -0.6$$

ITEM 109

Jhaiya has a bank account that she started with an initial deposit of \$250. Yesterday she deposited a check for \$125 then withdrew \$75 in cash. Which equation can be used to model Jhaiya's bank transactions?

- A. $250 + 125 + 75 = 450$
- B. $-250 + 125 - 75 = -200$
- C. $250 + (-125) + (-75) = 50$
- D. $250 + 125 + (-75) = 300$

ITEM 110

Select **three** expressions that are equivalent to $2.9 - \frac{1}{3} + (-0.8)$.

A. $2.9 + \frac{1}{3} + 0.8$

B. $2.9 + \frac{1}{3} - 0.8$

C. $2.9 - \frac{1}{3} + 0.8$

D. $2.9 - \frac{1}{3} - 0.8$

E. $2.9 + (-\frac{1}{3}) - 0.8$

F. $2.9 + (-\frac{1}{3}) + (-0.8)$

G. $2.9 + (-\frac{1}{3}) - (-0.8)$

ITEM 111

On February 14, 1899, New Orleans hosted the coldest Mardi Gras on record. In the morning there was three inches of snow and ice on the ground, and the temperature was 22°F . By the afternoon, the temperature had risen to 38°F . Which of the following expressions could be used to determine the difference between the minimum and maximum temperatures?

A. $22 - 38$

B. $|22 - 38|$

C. $22 - (-38)$

D. $|22 - (-38)|$

ITEM 112

The United States experienced an Arctic outbreak in 1899. In Tallahassee, Florida, on the morning of February 13, 1899, the temperature was -2°F . By late afternoon, the temperature was 22°F . Which expression could be used to determine the change in temperature from morning to afternoon? Select all that apply.

A. $|22 - (-2)|$

B. $22 - (-2)$

C. $22 + (-2)$

D. $22 - 2$

E. $|-2 - 22|$

F. $|-2 + 22|$

ITEM 113

Which expression is equivalent to $3.3 - 4.7$?

A. $4.7 - 3.3$

B. $3.3 + 4.7$

C. $3.3 + (-4.7)$

D. $3.3 - (-4.7)$

ITEM 114

Two hikers walked a trail in the Kisatchie National Forest and used an altimeter to track their altitude. At the beginning of the hike they were 6 feet below sea level, and at the summit they were 249 feet above sea level. Which expression could the hikers use to find the difference in elevation from the beginning of their hike to the summit?

A. $-6 + 249$

B. $249 - 6$

C. $|246 - 6|$

D. $|249 - (-6)|$

ITEM 115

Which expressions are equivalent to $9 - (-5) - 2$? Select **all** that apply.

A. $9 + 5 + 2$

B. $9 + 5 - 2$

C. $9 - 5 + 2$

D. $9 - 5 - 2$

E. $9 + (-5) - 2$

F. $9 + (-5) + (-2)$

G. $9 + 5 + (-2)$

ITEM 116

Which expressions are equivalent to $7 - 13 + (-4)$? Select **all** that apply.

A. $7 - 13 - 4$

B. $7 + 13 - 4$

C. $7 - 13 + 4$

D. $7 + (-13) - 4$

E. $7 - (-13) + 4$

F. $7 + (-13) + (-4)$

ITEM 117

Select **three** expressions equivalent to $-\frac{3}{4} - \left(\frac{1}{4} + 0.07\right)$

A. $\left(-\frac{3}{4} + \frac{1}{4}\right) + 0.07$

B. $\left(-\frac{3}{4} - \frac{1}{4}\right) - 0.07$

C. $\left(-\frac{3}{4} - \frac{1}{4}\right) + 0.07$

D. $-\frac{3}{4} - \frac{1}{4} - 0.07$

E. $-\frac{3}{4} + \left(-\frac{1}{4} - 0.07\right)$

ITEM 118

Which of the following is uses another strategy to correctly evaluate the expression: $-4 -(5 + 6.7)$.

A. $-4 + (-5 + 6.7) = -2.3$

B. $-(5 + 6.7) + 4 = -7.7$

C. $-(4 - 5) + 6.7 = 7.7$

D. $-4 + (-5 - 6.7) = -15.7$

ITEM 119

Select **three** expressions equivalent to $-2 - (6.5 + 3)$.

A. $(6.5 + 3) - 2$

B. $-(6.5 + 3) - 2$

C. $-(6.5 + 3) + 2$

D. $-2 - (3 + 6.5)$

E. $-(2 - 6.5) + 3$

F. $-2 + (-6.5 - 3)$

G. $-2 + (-6.5 + 3)$

ITEM 120

Select expressions equivalent to $-(8.9 + \frac{5}{4}) - \frac{5}{4}$.

A. $-8.9 + \frac{5}{4} - \frac{5}{4}$

B. $-8.9 - \frac{5}{4} - \frac{5}{4}$

C. $-8.9 - (\frac{5}{4} - \frac{5}{4})$

D. $-(8.9 + \frac{5}{4} + \frac{5}{4})$

E. $-8.9 + (\frac{5}{4} - \frac{5}{4})$

ITEM 121

select **two** expressions equivalent to $-\frac{3}{4} - (\frac{1}{2} - \frac{5}{8})$

A. $-(\frac{3}{4} + \frac{1}{2}) + \frac{5}{8}$

B. $-\frac{3}{4} + (-\frac{1}{2} - \frac{5}{8})$

C. $-\frac{3}{4} + (-\frac{1}{2} + \frac{5}{8})$

D. $-(\frac{3}{4} - \frac{1}{2}) - \frac{5}{8}$

E. $(-\frac{3}{4} - \frac{1}{2}) - \frac{5}{8}$

ITEM 122

Select **two** expressions equivalent to $-2.14 - (5.23 - 7.77)$.

A. $-(2.14 - 5.23) - 7.77$

B. $-2.14 + (-5.23 - 7.77)$

C. $(-2.14 - 5.23) - 7.77$

D. $-(2.14 + 5.23) + 7.77$

E. $-2.14 + (-5.23 + 7.77)$

ITEM 123

Which expression(s) are equivalent to $-6.15 - (8.02 - 9.99)$? Select **each** correct answer.

A. $-(6.15 + 8.02) + 9.99$

B. $-(6.15 - 8.02) - 9.99$

C. $-6.15 + (8.02 - 9.99)$

D. $-6.15 + (-8.02 - 9.99)$

E. $-6.15 + (-8.02 + 9.99)$

F. $(-6.15 - 8.02) - 9.99$

ITEM 124

Which expression(s) are equivalent to $-12 - (14 - 30)$? Select **each** correct answer.

A. $-12 + (14 - 30)$

B. $-12 + (-14 - 30)$

C. $-12 + (-14 + 30)$

D. $-(12 + 14) + 30$

E. $-12 - 14 - 30$

F. $-12 - 14 + 30$

ITEM 125

Which expressions are equivalent to $4 - (6.5 - 7)$? Select all that apply .

A. $4 - 6.5 - 7$

B. $4 - 6.5 + 7$

C. $4 + (-6.5 + 7)$

D. $4 - (7 - 6.5)$

E. $-6.5 + 7 + 4$

F. $-(6.5 - 7) + 4$

ITEM 126

Which expressions are equivalent to $-\frac{3}{8} + \frac{4}{5} + \frac{3}{8} - \frac{5}{4}$? Select **all** that apply.

A. $-\frac{5}{4} + \frac{4}{5}$

B. $2 \cdot \frac{3}{8} + (\frac{4}{5} - \frac{5}{4})$

C. $\frac{4}{5} - \frac{5}{4}$

D. $\frac{(4-5)}{(5-4)}$

E. $(\frac{3}{8} - \frac{3}{8}) + (\frac{4}{5} - \frac{5}{4})$

F. $(\frac{3}{8} - \frac{3}{8}) - (\frac{5}{4} + \frac{4}{5})$

The Number System

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Items 127- 169

ITEM 127

In which situation could the quotient of $-36 \div 3$ be used to answer the question?

- A. The balloon rose 36 feet every second. How many feet did the balloon rise in 3 seconds?
- B. Lidia took 36 tomatoes off of her tomato plants over 3 days. How much did the amount of tomatoes on her tomato plants change each day?**
- C. In a soccer game there are 3 goals in 36 minutes. What is the rate of goals scored?
- D. There are 36 apples in a bag. 3 apples are eaten. How many apples are left?

ITEM 128

Evaluate.

$$1\frac{1}{5} \div 1\frac{5}{6}$$

A. $-1\frac{6}{25}$

B. $-\frac{36}{55}$

C. $1\frac{6}{25}$

D. $\frac{36}{55}$

ITEM 129

Which decimal is equivalent to $\frac{9}{22}$?

A. $0.\overline{24}$

B. $0.2\overline{4}$

C. $0.40\overline{9}$

D. $0.4\overline{09}$

ITEM 130

What number is equivalent to $\frac{35}{4}$?

- A. 7
- B. 8.34
- C. 8.75**
- D. 31

ITEM 131

Which decimal is equivalent to $\frac{11}{6}$?

A. $1.\overline{83}$

B. $1.\overline{8\overline{3}}$

C. $5.4\overline{5}$

D. $5.4\overline{5}$

ITEM 132

Which decimal is equivalent to $\frac{168}{55}$?

A. 3.0

B. $3.0\bar{5}$

C. $3.0\overline{54}$

D. $3.\overline{054}$

ITEM 133

Machinists work with measuring tools that use decimals. How is $\frac{2}{5}$ written as a decimal?

A. 0.25

B. 0.4

C. 0.52

D. 0.8

ITEM 134

Write $-4\frac{1}{8}$ as a decimal.

A. -4.1

B. -4.125

C. -4.18

D. -4.8

ITEM 135

What is $\frac{1}{11}$ as a decimal?

A. $0.\overline{09}$

B. $0.0\overline{9}$

C. $0.\overline{01}$

D. $0.0\overline{1}$

ITEM 136

Which situation correctly models the product of $(-1)(-1)$?

- A. As a reward for Daryl's good behavior, Daryl's dad takes away Daryl's \$1 debt. Daryl now has \$0.
- B. The temperature outside twice drops -1. The temperature has changed by -2.
- C. After 1 hour a hiker has descended 1 mile down a mountain. The hiker's new altitude is 1 mile below sea level.
- D. In a card game, Kaden discards 1 card worth -1 point, thereby increasing the value of his hand by 1 point.

ITEM 137

Which situation correctly models the equation $1\frac{1}{2} \cdot 7 = 10\frac{1}{2}$?

A. Jordan coded $1\frac{1}{2}$ games every day for 7 days. He coded a total of $10\frac{1}{2}$ games.

B. Garrett completed $1\frac{1}{2}$ levels of his favorite game in 7 minutes. He completed $10\frac{1}{2}$ levels per minute.

C. It took Rebecca $1\frac{1}{2}$ hours to make 7 bracelets. She made a total of $10\frac{1}{2}$ bracelets.

D. It took Olivia $1\frac{1}{2}$ hours to write a 7 page story. She wrote at a rate of $10\frac{1}{2}$ pages per hour.

ITEM 138

Which situation can be represented by the equation $6\frac{1}{2} \cdot (-4500) = -27000$?

A. It took Jayden $6\frac{1}{2}$ hours to hike 4500 feet down a mountain. He hiked a total of -27000 feet.

B. After $6\frac{1}{2}$ days a certain stock dropped 4500 points. The stock now has a value of -27000 points.

C. To pay for her new car, Elise accepts a $6\frac{1}{2}$ year loan where \$4500 is debited from her bank account each year. Elise agrees to a total debit of \$27000.

D. After $6\frac{1}{2}$ minutes a deep-water drone had descended 4500 feet. The drone's altitude was -27000 feet.

ITEM 139

Which situation can be represented by the equation $4 \cdot 1\frac{2}{3} = 6\frac{2}{3}$?

- A. In 4 hours Rodney painted $1\frac{2}{3}$ of the walls in his kitchen. He painted $6\frac{2}{3}$ of the kitchen.
- B. Over the course of 4 days, Ashlynn studied for $1\frac{2}{3}$ hours per day. She studied for a total of $6\frac{2}{3}$ hours.
- C. Lyric made 4 hats in $1\frac{2}{3}$ days. She made a total of $6\frac{2}{3}$ hats.
- D. It took Jeremy 4 minutes to read $1\frac{2}{3}$ pages of his book. He reads $1\frac{2}{3}$ pages per minute.

ITEM 140

Select **two** expressions that result in negative products.

A. $(-4.5)(-0.1)(-2.5)$

B. $(0.5)(-0.67)(-1.5)$

C. $(-14)(16)(-9)(12)$

D. $(\frac{5}{12})(-\frac{12}{5})(-1)$

E. $-1(2\frac{2}{3})(\frac{7}{8})(-4.5)$

F. $-1(3 \cdot 5 \cdot \frac{1}{2} \cdot 4)$

ITEM 141

Select **three** expressions that result in negative products.

A. $(\frac{3}{2})(-\frac{2}{3})(-\frac{1}{3})$

B. $(-50)(2)(-90)$

C. $(60)(-30)(80)(70)$

D. $-1\left[(-10\frac{1}{3})(-\frac{1}{8})(-12\frac{2}{3})(-\frac{2}{3})\right]$

E. $(\frac{3}{4})(-7)(7\frac{1}{4})(3)$

F. $(-6.4)(2.5)(-1.3)(8.7)$

ITEM 142

Select **three** expressions that result in positive products.

A. $(-10)(-0.4)(-18)$

B. $(\frac{4}{3})(-\frac{6}{5})(-\frac{2}{3})$

C. $-[(12)(-6)(-14)]$

D. $(-8\frac{2}{3})(-\frac{1}{2})(-\frac{22}{3})(-\frac{14}{15})$

E. $(-\frac{10}{6})(-20)(7\frac{3}{5})(4)$

F. $(-2.4)(-7)(5.4)(-1.6)$

ITEM 143

Select **four** expressions that result in positive products.

A. $(-7)(2.2)(-11)$

B. $(-1\frac{1}{3})(-\frac{1}{2})(2\frac{1}{2})$

C. $(8)(1)(-10)(9)$

D. $(-6\frac{2}{3})(41.4)(-5.2)(-\frac{9}{7})$

E. $-1\left[\frac{6}{5}(-1)(.01)\right]$

F. $(-2.1)(-5.3)(-7.2)(-8.04)$

ITEM 144

Which expressions have products that are negative? Select **all** that apply.

A. $(6.5)(-2)(-5.6)$

B. $(1\frac{1}{2})(\frac{2}{3})(-\frac{4}{5})$

C. $(-16)(-10)(-24)$

D. $(-12)(-0.1)(-66)(-1)$

E. $-(\frac{5}{8})(\frac{1}{7})(\frac{6}{7})(\frac{7}{9})$

F. $(9.2)(-3.4)(9.7)(6.01)$

ITEM 145

Which situation can be modeled by the equation $-2.5 \times 3 = -7.5$?

- A. The temperature outside fell 2.5 every 3 hours. The temperature decreased 7.5 per hour.
- B. Earl borrowed \$2.50 from his sister on 3 separate occasions. He is in debt to his sister for \$7.50.**
- C. The value of a gaming company rose 2.5 points each day for 3 days in a row. The value of the company increased by 7.5 points.
- D. Rachel earned 2.5 bonus points on 3 different tests. She earned a total of 7.5 bonus points.

ITEM 146

Which situation can be modeled by the equation $1\frac{1}{3} \times 4 = 5\frac{1}{3}$?

A. Emily ate $1\frac{1}{3}$ pickles in 4 minutes. She ate $5\frac{1}{3}$ pickles per minute.

B. John painted $1\frac{1}{3}$ murals in 4 weeks. He painted a total of $5\frac{1}{3}$ murals.

C. Taylor read $1\frac{1}{3}$ books in 4 hours. She read $5\frac{1}{3}$ books each hour.

D. Kyleigh drew in her sketchpad $\frac{1}{3}$ hours each day for 4 days. She drew for a total of $5\frac{1}{3}$ hours.

ITEM 147

Which expressions have products that are positive? Select **all** that apply.

A. $(-7)(3)(-2)$

B. $(15)(-0.5)(4.1)$

C. $(\frac{1}{2})(\frac{2}{3})(-\frac{4}{5})$

D. $(9)(-1)(6)(-8)$

E. $(-5\frac{3}{5})(-2\frac{1}{7})(-\frac{6}{7})(-\frac{7}{9})$

F. $(-2.9)(-4.3)(9.7)(-1.06)$

ITEM 148

Which situation can be modeled with the expression $\frac{3}{4} \div \frac{1}{3}$?

A. Sydney makes $\frac{3}{4}$ gallon of eggnog and $\frac{1}{3}$ gallon of ginger ale punch. How many more gallons of eggnog than punch did Sydney make?

B. Haylee got $\frac{3}{4}$ pound of jawbreakers for her birthday. If she eats $\frac{1}{3}$ pound of jawbreakers each week, how many weeks will her jawbreakers last?

C. Madelyn is wrapping presents and tying each present with $\frac{3}{4}$ yard of ribbon. How many $\frac{3}{4}$ yard lengths of ribbon can Madeline cut from a piece of ribbon that is $\frac{1}{3}$ yard in length?

D. Trayland runs $\frac{3}{4}$ kilometer in 5 minutes. What is Trayland's rate in kilometers per minute?

ITEM 149

Select the expression equivalent to $-\left(\frac{31}{-2}\right)$.

A. $\frac{-31}{2}$

B. $-\left(\frac{-31}{-2}\right)$

C. $-\frac{31}{2}$

D. $\frac{31}{2}$

ITEM 150

Select **three** expressions equivalent to $\frac{-3}{4}$.

A. $-\left(\frac{3}{-4}\right)$

B. $-\left(\frac{-3}{-4}\right)$

C. $-\frac{3}{4}$

D. $-\left(\frac{-3}{4}\right)$

E. $\frac{3}{-4}$

ITEM 151

In which situation could the quotient of $-36 \div (-4)$ be used to answer the question?

- A. A football team lost 36 yards on first down and 4 yards on second down. How many total yards did the team lose on both plays?
- B. An underwater drone drops 36 feet every minute. What is its change in altitude after 4 minutes?
- C. Owen borrowed \$36 from his brother, Lucas. Owen agrees to pay back \$4 every week until the debt is cleared. How many weeks will it take for Owen to repay \$36 to Lucas?
- D. Chasity withdrew \$36 from her bank account over 4 days; she withdrew the same amount each day. By what amount does her bank account change each day?

ITEM 152

A pizzeria includes mozzarella and parmesan cheeses on all of their pizza pies. The pizzeria mixes $7\frac{1}{2}$ pounds mozzarella with $4\frac{3}{4}$ pounds parmesan and uses $\frac{1}{8}$ of this cheese mixture on each pizza. Which expression models the total number of pizzas that can be made by using all of the mozzarella and parmesan mixture?

A. $(7\frac{1}{2} \div \frac{1}{8}) + 4\frac{3}{4}$

B. $\frac{1}{8} \div (7\frac{1}{2} + 4\frac{3}{4})$

C. $(7\frac{1}{2} + 4\frac{3}{4}) \div \frac{1}{8}$

D. $7\frac{1}{2} + (4\frac{3}{4} \div \frac{1}{8})$

ITEM 153

The owners of a snowball stand make a special summer-time drink by mixing fresh-squeezed orange juice and Hawaiian Punch. They have $3\frac{1}{2}$ gallons of fresh-squeezed orange juice and $4\frac{3}{4}$ gallons of Hawaiian Punch which they mix together and pour out $\frac{1}{16}$ of a gallon as one serving. Which expression could be used to find the total number of servings of the drink mixture?

A. $(3\frac{1}{2} \div \frac{1}{16}) + 4\frac{3}{4}$

B. $3\frac{1}{2} + (4\frac{3}{4} \div \frac{1}{16})$

C. $\frac{1}{16} \div (3\frac{1}{2} + 4\frac{3}{4})$

D. $(3\frac{1}{2} + 4\frac{3}{4}) \div \frac{1}{16}$

ITEM 154

Which one of the following situations could be modeled by the expression $2\frac{2}{3} \div \frac{1}{4}$?

- A. Sydney made 8 bracelets from $2\frac{2}{3}$ bags of beads. How many bracelets can she make with $\frac{1}{4}$ a bag of beads?
- B. Antonio has $2\frac{2}{3}$ pounds of taffy. He eats $\frac{1}{4}$ of it. How much taffy does he have left?
- C. Rachel wants $\frac{1}{4}$ cup portions of home-made pudding for her dinner party. If she has $2\frac{2}{3}$ cups of pudding, then how many $\frac{1}{4}$ cup portions can she make?
- D. Before lunch JP's lunch box weighed $2\frac{2}{3}$ pounds, and, after eating all the food during lunch, it weighed $\frac{1}{4}$ of a pound. How many pounds did the food in his lunch box weigh?

ITEM 155

In which situation could the expression $-15 \div 3$ be used to answer the question?

- A. Abby withdrew a total of \$15 from her bank account over three days. She withdrew the same amount each day. By how much did the amount in her bank account change each day?
- B. An underwater welder is repairing an oil pipeline 15 feet below sea level. He dives down three feet to repair another section of the pipeline. What is his new elevation?
- C. Fifteen people are at a dinner party. There are three tables, each with the same number of people. How many people are seated at each table?
- D. The temperature of a substance decreases by 15° Celsius per minute. What is the total temperature change of the substance after three minutes?

ITEM 156

Evaluate the expression shown below. Write your answer as a decimal. Enter your decimal below.

.78

$$\frac{-15 - 2.1 \cdot (3.6 - 10)}{2 - 4}$$

ITEM 157

Select **three** expressions equivalent to the expression below.

$$\frac{-4 - 2(6.4 + 8)}{2}$$

A. $\frac{-2(6.4+8)-4}{2}$

B. $\frac{-4+2 \cdot (-6.4-8)}{2}$

C. $\frac{-4-2 \cdot (6.4)+8}{2}$

D. $\frac{-4+2 \cdot (-6.4+8)}{2}$

E. $-2 + (3.2 + 4)$

F. $-2 - (6.4 + 8)$

ITEM 158

Select the expression that is equivalent to $5 \cdot \left(-3\frac{3}{4}\right)$.

A. $5 \cdot (-3) - \frac{3}{4}$

B. $5 \cdot (-3) - 5 \cdot \frac{3}{4}$

C. $5 \cdot (-3) + 5 \cdot \frac{3}{4}$

D. $5 \cdot \left[-3 - \left(3\frac{3}{4}\right)\right]$

ITEM 159

Select the expression equivalent to $-4 \cdot 2 \frac{1}{2}$.

A. $-4 \cdot 2 + \frac{1}{2}$

B. $-(4 \cdot 2) + \left(4 \cdot \frac{1}{2}\right)$

C. $-(4 \cdot 2) - \left(4 \cdot \frac{1}{2}\right)$

D. $-4 \cdot \left(2 - \frac{1}{2}\right)$

ITEM 160

Select **four** expressions equivalent to $\frac{5}{-8} \cdot (-2)$.

A. $-\left(\frac{5}{8} \cdot 2\right)$

B. $-\frac{5}{8} \cdot (-2)$

C. $\frac{5 \cdot (-2)}{8 \cdot (-2)}$

D. $-\frac{1}{8} \cdot 5 \cdot (-2)$

E. $2 \cdot \frac{5}{8}$

F. $\frac{5 \cdot 2}{8}$

ITEM 161

Select **three** expressions that represent a number less than 1.

A. $\frac{3}{4} \cdot \frac{2}{3}$

B. $\frac{2}{3} + 2$

C. $2 \cdot \frac{2}{3}$

D. $\frac{3}{4} + \frac{1}{3}$

E. $\frac{4}{3} \cdot \frac{3}{2}$

F. $\frac{3}{4} + \frac{4}{3}$

ITEM 162

Select **three** expressions that represent a number greater than 1.

A. $\frac{1}{2} + \frac{2}{3}$

B. $\frac{2}{3} \cdot \frac{1}{3}$

C. $4 + \frac{3}{5}$

D. $\frac{1}{2} \cdot \frac{2}{3}$

E. $\frac{5}{6} + \frac{3}{4}$

F. $\frac{1}{3} \cdot 4$

ITEM 163

Select **four** expressions that represent a number greater than -1.

A. $-2 \cdot \frac{3}{4}$

B. $-\frac{2}{3} \div \left(-\frac{3}{4}\right)$

C. $-\frac{2}{3} \cdot \left(-\frac{3}{4}\right)$

D. $-\frac{1}{2} \div \left(-\frac{1}{4}\right)$

E. $\frac{3}{5} \cdot \left(-\frac{5}{3}\right)$

F. $-\frac{1}{4} \div (-1)$

ITEM 164

Select **two** expressions that represent a number less than -1.

A. $-2 + \frac{1}{2}$

B. $\frac{4}{5} \cdot \left(-\frac{3}{4}\right)$

C. $-1 \div 2$

D. $1\frac{2}{5} \cdot \left(-\frac{3}{4}\right)$

E. $-1\frac{1}{2} + \left(-\frac{1}{2}\right)$

F. $2 \cdot \left(-\frac{1}{2}\right)$

ITEM 165

Which of the following is the decimal expansion of $\frac{-1}{-6}$?

- A. $-0.1\bar{6}$
- B. $-0.\bar{16}$
- C. $0.1\bar{6}$
- D. 1.6

ITEM 166

Select **three** of the following numbers in which the decimal expansion eventually repeats.

A. $\frac{12}{-30}$

B. $\frac{8.5}{17}$

C. $\frac{3}{18}$

D. $\frac{5}{7.5}$

E. $-1\frac{5}{12}$

F. $\frac{-6}{15}$

ITEM 167

For which of the following numbers does the decimal expansion eventually repeat? Select **all** that apply.

A. $-\frac{1}{5}$

B. $-\frac{2}{3}$

C. $\frac{5}{8}$

D. $-1\frac{3}{4}$

E. $5\frac{1}{6}$

ITEM 168

For which of the following numbers does the decimal expansion terminate in zeros? Select **all** that apply.

A. $\frac{3}{2}$

B. $-\frac{2}{6}$

C. $1\frac{1}{4}$

D. $\frac{-1}{2}$

E. $\frac{5}{-9}$

F. $\frac{12}{20}$

ITEM 169

Which of the following is the decimal expansion of $-\frac{7}{12}$?

A. -0.583

B. $-0.5\overline{83}$

C. $-0.5\overline{83}$

D. $-0.\overline{583}$

The Number System

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Items 170- 180

ITEM 170

A company reported that the total amount of sales for the month was \$10,500. The company also reported that this amount was \$4250 less than the average amount of sales for the same month during the last 5 years. The company summarized their report in this table.

Amount of sales for the month	\$10,500.00
Compared to average amount of sales for the month	-\$4250.00

What was the average amount of sales, in dollars, for this month during the last 5 years?

Enter your answer as a decimal below. You may not use a comma, but you may use a dollar sign.

\$14570

\$14570.00

ITEM 171

Joseph simplified the expression $-2.4(1.2 + 3.5) + 7.6(-2.3)$.

Joseph's work	
Step 1:	$-2.88 - 8.4 + 7.6(-2.3)$
Step 2:	$-2.88 - 8.4 - 17.48$
Step 3:	$-(2.88 - 8.4 - 17.48)$
Step 4:	$-(-23)$
Step 5:	23

A classmate noted that Joseph made an error which resulted in an incorrect answer. In which step did he make his first error?

- A. Step 1
- B. Step 2
- C. Step 3**
- D. Step 4

ITEM 172

Two students evaluated the following expression: $\frac{1}{4}\left(2 - 5\frac{1}{2}\right) - \left(-\frac{7}{8}\right)$

Shown below are the steps that each of the two students used.

Lyric's Steps	Elise's Steps
Step 1: $\frac{1}{4}\left(-3\frac{1}{2}\right) - \left(-\frac{7}{8}\right)$	Step 1: $\frac{1}{4}(2) - \frac{1}{4}\left(-\frac{11}{2}\right) - \left(-\frac{7}{8}\right)$
Step 2: $\frac{1}{4}\left(-\frac{7}{2}\right) - \left(-\frac{7}{8}\right)$	Step 2: $\frac{1}{2} - \left(-\frac{11}{8}\right) - \left(-\frac{7}{8}\right)$
Step 3: $-\frac{7}{8} - \frac{7}{8}$	Step 3: $\frac{1}{2} + \frac{11}{8} + \frac{7}{8}$
Step 4: $-\frac{14}{8}$	Step 4: $\frac{4}{8} + \frac{11}{8} + \frac{7}{8}$
Step 5: $-\frac{7}{4}$	Step 5: $\frac{22}{8}$
	Step 6: $\frac{11}{4}$

Select **two** of the statements about the students' work that are true.

- A. Lyric's evaluation is correct.
- B. Elise's evaluation is correct.
- C. Lyric makes an error in step 4.
- D. Elise makes an error in step 1.**
- E. Neither Lyric's nor Elise's evaluations are correct.**

ITEM 173

On Christmas Eve in 1924, Fairfield, Montana experienced a drastic temperature change. At noon, it was 63°F outside. By midnight, the temperature was -21°F .

Which statement correctly describes this situation?

- A. From 12 PM to 12 AM the temperature in Fairfield increased by 42 degrees Fahrenheit.
- B. From 12 PM to 12 AM the temperature in Fairfield increased by 84 degrees Fahrenheit.
- C. From 12 PM to 12 AM the temperature in Fairfield decreased by 42 degrees Fahrenheit.
- D. From 12 PM to 12 AM the temperature in Fairfield decreased by 84 degrees Fahrenheit.

ITEM 174

Jhaiya is tracking the temperature of a substance in the chemistry laboratory. At 9 AM the temperature of the substance was -4°C . At 1 PM the temperature of the substance was 3°C .

Select the statement that correctly describes this situation.

- A. Between 9 AM and 1 PM the temperature of the substance decreased by 12 degrees Celsius.
- B. Between 9 AM and 1 PM the temperature of the substance increased by 7 degrees Celsius.**
- C. Between 9 AM and 1 PM the temperature of the substance increased by -1 degrees Celsius.
- D. Between 9 AM and 1 PM the temperature of the substance decreased by 7 degrees Celsius.

ITEM 175

An engineer removed 19.55 milliliters of fluid from a reservoir in a motor to test for impurities. The sample was $2\frac{7}{8}$ milliliters less than $\frac{3}{20}$ of the total capacity of the reservoir.

What was the total capacity, in milliliters, of the reservoir before the engineer removed the sample of 19.55 milliliters of fluid? Show your work or explain how you know.

Enter your explanation and your answer below.

X: the total capacity, in milliliters, of the reservoir.

$$\frac{3}{20}x = 19.55 + 2\frac{7}{8}$$

$$x = 149.5$$

ITEM 176

Jadon likes to invest money in the stock market. Last week, the value of his investment changed by -\$2.76 each day. After how many days was the total change in value -\$19.32?

Enter your answer below.

7
7.0

ITEM 177

The hottest day ever recorded in Louisiana was in Plain Dealing on August 10, 1936, where the afternoon thermometer read 114. Over the next 6 hours, the temperature changed an average of -7.5 per hour. Which statement correctly describes the change in temperature from the beginning to the end of the six-hour period?

- A. The temperature increased 1.25.
- B. The temperature decreased 1.25.
- C. The temperature increased 45.
- D. The temperature decreased 45.

ITEM 178

Over a nine-year period, the number of persons employed in the manufacturing industry in Louisiana changed by an average of -1845 jobs per year. Which statement correctly describes the change in the number of manufacturing jobs in Louisiana for this nine-year period?

- A. Employment in the manufacturing industry decreased by 205 jobs.
- B. Employment in the manufacturing industry increased by 205 jobs.
- C. Employment in the manufacturing industry decreased by 16,605 jobs.**
- D. Employment in the manufacturing industry increased by 16,605 jobs.

ITEM 179

On Tuesday, the temperature at 9 AM at Camden's house was -4° Fahrenheit. By 4 PM, the temperature at his house was 8° Fahrenheit. Which statement about the change in temperature from 9 AM to 4 PM at Camden's house is true?

- A. The temperature decreased by 2° Fahrenheit.
- B. The temperature decreased by 4° Fahrenheit.
- C. The temperature increased by 8° Fahrenheit.
- D. The temperature increased by 12° Fahrenheit.

ITEM 180

At the start of the week, the value of an investment was \$74.38. By the end of the week, the value of the investment changed by a gain of \$26.43. What was the value, in dollars, of the investment at the end of the week?

Enter your answer below.

100.81

Expressions and Equations

7.EE.A.01

Items 181-197

ITEM 181

Which expression is equivalent to $\frac{2}{4}(16 + 8x - 4)$?

- A. $10x$
- B. $-8x + 10$
- C. $4x + 6$
- D. $\frac{2}{4}x + 12$

ITEM 182

Which expression is equivalent to the expression given below?

$$-3.5(2 - 1.5n) - 4.5n$$

A. $-7 - 6n$

B. $-7 + 0.75n$

C. $-7 - 9.75n$

D. $-7 - 9.5n$

ITEM 183

Which of the following expressions is equivalent to: $\frac{2}{5} \left(\frac{5}{2}x + \frac{20}{8} \right)$

A. $\left(\frac{2(5)}{5(2)} \right) x + \left(\frac{2(20)}{5(8)} \right)$

B. $\left(\frac{2(5)}{7} x + \frac{2(20)}{13} \right)$

C. $\left(\frac{2(5)(20)}{5(2)(8)} \right) x$

D. $\left(\frac{2(5)}{5(2)} \right) x + \left(\frac{20}{8} \right)$

ITEM 184

Which of the expressions below is equivalent to $-3.5x + 3.5 - x + 6.25$?

A. $-4.5x + 9.75$

B. $-2.5x + 9.75$

C. $-2.5x - 2.75$

D. $-4.5x - 2.75$

ITEM 185

Which of the following expressions is equivalent to: $-0.25(12y + 4)$?

A. $11.75y + 4$

B. $-3y - 1$

C. $11.75y + 3.75$

D. $-3y - 4$

ITEM 186

Which answer shows another way of writing the expression below?

$$4(3b) - 2(3b + 1)$$

A. $2b + 1$

B. $2b - 2$

C. $6b + 1$

D. $6b - 2$

ITEM 187

What is the simplified form of the expression below?

$$5y - 2y + y \cdot 3$$

A. 0

B. 6y

C. 10y

D. 12y

ITEM 188

Sam cannot read a part of this homework problem.

$$-7y + 5(3 + \underline{\quad}y)$$

Sam knows the expression simplifies to $3y + 15$. What number belongs on the blank line in the homework problem?

A. -4

B. 2

C. 4

D. 10

ITEM 189

Simplify the expression below.

$$-4(3p) + p$$

A. $-11p$

B. $-13p$

C. $-16p$

D. $-12 + p$

ITEM 190

Simplify this expression.

$$0.75(5v + 11) - 0.25(11 + v)$$

A. $5v + 11$

B. $5v + 5.5$

C. $3.5v + 5.5$

D. $3.75v + 8.25$

ITEM 191

Damon will write an equivalent expression for $60xyz + 36yz + 24xy$ by dividing each term by a common factor and rewriting the expression as the product of a common factor and the sum of remaining factors.

Select **three** possibilities that he could use as the common factor for the equivalent expression.

A. 6

B. $2x$

C. $4y$

D. $12y$

E. z

F. $2xyz$

Madelyn will factor the given expression by dividing each term by a common factor.

$$32xyz - 20xy + 12x$$

She wants to factor the expression using the terms' greatest common factor. Which one of the choices is equivalent to the given expression and uses the greatest common factor to rewrite the expression as a product of the GCF and the sum of the remaining factors of the three terms?

A. $2x \cdot (16yz - 10y + 6)$

B. $4x \cdot (8yz + 5y + 3)$

C. $4x \cdot (8yz - 5y + 3)$

D. $4 \cdot (8xyz - 5xy + 3x)$

ITEM 193

Which expression is equivalent to $\frac{5}{4}x - 2$?

A. $\frac{1}{2}\left(\frac{5}{2}x - 4\right)$

B. $\frac{5}{2}\left(\frac{1}{2}x - 2\right)$

C. $\frac{1}{4}(x - 4) - (x + 1)$

D. $\left(\frac{1}{4}x - 1\right)(5x - 1)$

ITEM 194

Which of the following expressions are equivalent to $3x - 5y - 3(x - y)$?

A. $-2y$

B. $6x - 6y$

C. $-5xy$

D. $(3x - 3x) + (3y - 5y)$

E. $(3x - 3x) - (3y - 5y)$

F. $15(x - y)(x - y)$

ITEM 195

Which expressions listed below are equivalent to $3x - \frac{5}{4}y + \frac{9}{2}$? Select **each** correct answer.

A. $3x + \frac{1}{2}(-\frac{5}{2}y + 9)$

B. $\frac{7}{4}xy + \frac{9}{2}$

C. $\frac{1}{4}(12x - 5y + 18)$

D. $-\frac{5}{4}y + 3(x + \frac{9}{2})$

E. $-\frac{7}{4}(x + y) + \frac{9}{2}$

ITEM 196

Which expression is equivalent to $(4y - 2.5) - 1.75(y+1)$?

- A. $2.25y - 1.5$
- B. $2.25y - 4.25$**
- C. $2.25y + 1.75$
- D. $0.75y$

ITEM 197

What is the simplest form of the expression below? $5x + 12 - 2(x+7)$

Do **not** add any words to your answer.

3x-2

Expressions and Equations

7.EE.A.02

Items 198-208

ITEM 198

Stephanie and Kelandrea are in the Girl Scouts. They both sell 27 boxes of cookies each week. Stephanie sold an additional 5 boxes one week. Write an expression that represents the total number of boxes sold for the season if s = the number of weeks Stephanie sold cookies and k = the number of weeks Kelandrea sold cookies.

Option	Expression
I	$5 + 27(s + k)$
II	$27s + 27k + 5$
III	$5(27s + 27k)$
IV	$(27k) + (27s + 5)$
V	$27s(27k + 5)$

A. I, II, and IV only

B. I, II, III only

C. All except III

D. All except IV

ITEM 199

Sue and Juan both get paid an hourly wage of \$11.00 per hour for x hours of work. Sue was paid an extra \$33.00 for overtime work. Which expressions are equivalent to the amount of money Sue and Juan were paid together?

I. $\$11.00x + \$11.00x + \$33.00$

II. $2(\$11.00x) + \33.00

III. $2(\$11.00x + \$33.00)$

IV. $5(\$11.00x)$

V. $\$22.00(x) + \33.00

A. I, II, III

B. I, II, and V

C. I, II, IV, and V

D. All of the expressions are equivalent.

ITEM 200

Nakyiah has a summer job at a clothing store where she earns x dollars per hour. Today she received a 12% raise. Select **three** expressions that represent Nakyiah's new hourly pay rate.

A. $0.12x$

B. $1.12x$

C. $112x$

D. $x + 0.12x$

E. $x \cdot (1 + 0.12)$

F. $1 + 1.12x$

ITEM 201

Jayden has a pond that is 25 feet long by 40 feet wide. He will be raising ducks and plans to increase the length and width of his pond by the same number of feet. This expression represents the perimeter of the larger pond:

$$(x + 25) + (x + 40) + (x + 25) + (x + 40)$$

Which expression is equivalent to the expression for the perimeter of the larger pond?

- A. $130x$
- B. $2(x + 25)(x + 40)$
- C. $2(x + 25) + 2(x + 40)$
- D. $4(x + 25)(x + 40)$

ITEM 202

Layni and Jack are picking strawberries. At the end of the day, Layni has picked s pounds and Jack has picked 20% less than Layni. Which expression can be used to determine the amount of strawberries, in pounds, that Jack picked?

A. $\frac{1}{5}s$

B. $1 - \frac{1}{5}s$

C. $s - \frac{1}{5}$

D. $s(1 - \frac{1}{5})$

ITEM 203

Johnton and Gabe grew pumpkins for the Fall Festival. Johnton's pumpkin has a mass of k kilograms. Gabe's pumpkin has 15% more mass than Johnton's pumpkin. Select **two** expressions that can represent the mass, in kilograms, of Gabe's pumpkin.

A. $0.15k$

B. $1.15k$

C. $k + 0.15$

D. $k + 1.15$

E. $k + 0.15k$

ITEM 204

The cost of a bicycle is C dollars, and the sales tax rate is 8.5%. Select **three** expressions that represent the total cost of the bicycle after tax has been applied.

A. $0.085C$

B. $1.085C$

C. $C + 0.085C$

D. $1 + .085C$

E. $(1 + 0.085)C$

ITEM 205

The Music Shop is having a sale. All wind instruments are 10% off. Shiloh wants to buy a new flute. Which expression represents the discounted price of a flute that costs d dollars?

A. $0.1d$

B. $1 - 0.1d$

C. $\frac{9}{10}d$

D. $90d$

ITEM 206

The Skate Shop is offering a 30% discount on all skateboards. If s represents the price of one skateboard, which expression represents the discounted price of one skateboard, in dollars, before tax is applied?

- A. $0.3s$
- B. $1 - 0.3s$
- C. $0.7s$
- D. $70s$

ITEM 207

The price of a pound of candy is P dollars. The sales tax rate on the candy is 8%. Which expressions represent the total cost of the pound of candy, in dollars, after the tax has been applied?

Select **each** correct answer.

A. $P + 0.08P$

B. $0.08P$

C. $1.08P$

D. $1 + 0.08P$

E. $P(1 + 0.08)$

ITEM 208

A drainage pond is 4 feet long by 5 feet wide. The length and width of the pond will each be increased by the same number of feet. The expression $(x + 4) + (x + 5) + (x + 4) + (x + 5)$ represents the perimeter of the larger pond. Which expression is equivalent to the expression for the perimeter of the larger pond?

Select **each** correct answer.

A. $4x + 18$

B. $2(2x + 9)$

C. $2(x + 4)(x + 5)$

D. $4(x + 4)(x + 5)$

E. $2(x + 4) + 2(x + 5)$

Expressions and Equations

7.EE.B.03

Items 209- 229

ITEM 209

Loren made 20 ounces of a snack mix that was $\frac{2}{5}$ peanuts, 25% raisins, and 4 ounces of chocolate chips. The rest was granola. How many ounces of granola were in Loren's snack mix?

A. 3

B. 5

C. 10.4

D. 17

ITEM 210

Suze wants to make 5 pies for a party. She needs $1\frac{1}{2}$ cups of confectioners' sugar for each pie. She has two bags of confectioners' sugar in her pantry; one bag has $3\frac{1}{4}$ cups remaining, and the other bag has $6\frac{1}{8}$ cups remaining.

How many cups of confectioners' sugar will Suze have left after she prepares her pies?

A. $1\frac{3}{8}$

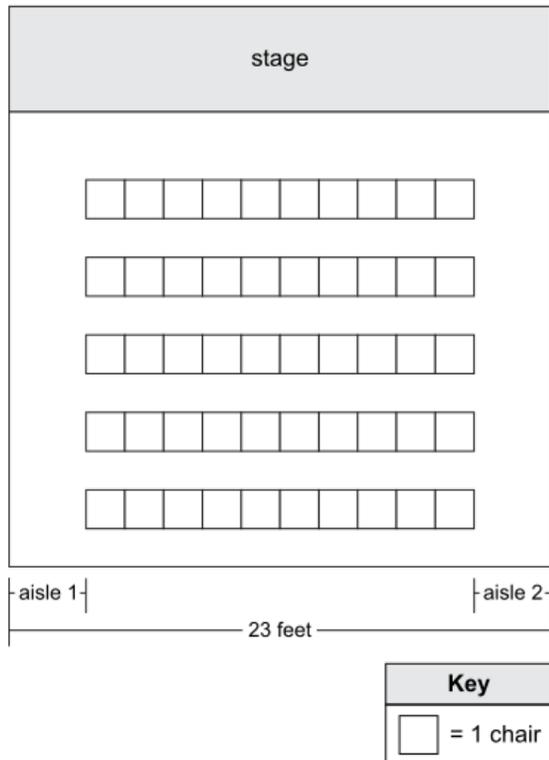
B. $1\frac{7}{8}$

C. $2\frac{1}{8}$

D. $3\frac{3}{4}$

ITEM 211

Use the picture to answer the question.



Note: Not to scale

Marcus is setting up chairs in rows of 10 for a band concert. The rows are centered in the room, leaving an aisle on either side. Each chair is 18.5 inches wide. The room is 23 feet wide.

What is the width of each aisle? Round your answer to the nearest tenth.

A. 3.8 feet

B. 4.5 feet

C. 6.8 feet

D. 7.6 feet

ITEM 212

Melissa is playing a trivia game. After 2 rounds of play, Melissa has -20 points. In the remaining rounds, she answers 7 questions correctly and 1 question incorrectly.

*Each correct answer is worth +25 points.

*Each incorrect answer is worth -10 points.

What is Melissa's final score?

- A. 100 points
- B. 145 points**
- C. 165 points
- D. 205 points

ITEM 213

At yesterday's ball game, 2,842 tickets were sold. The price of each ticket was \$7.50. Which amount is closest to the total amount of money received from ticket sales at yesterday's ball game?

- A. \$30,000
- B. \$25,000
- C. \$20,000**
- D. \$15,000

ITEM 214

Nikki knows that it rains about $\frac{1}{3}$ of the days during the year. Which method will produce the best estimate of the number of days it rains each year?

- A. There are 365 days in a year. This rounds to 300. Multiplying 300 by $\frac{1}{3}$ equals 100.
- B. There are 365 days in a year. This rounds to 400. Multiplying 400 by $\frac{1}{3}$ equals 133.
- C. There are 3 months in $\frac{1}{3}$ of a year, and there are about 30 days per month. Multiplying 3 times 30 equals 90 days.
- D. There are 4 months in $\frac{1}{3}$ of a year, and there are about 30 days per month. Multiplying 4 times 30 equals 120 days.

ITEM 215

About $\frac{3}{4}$ of the 900 students at Cami's school went to a dance. Which estimate is the most reasonable for the number of students who went to the dance?

- A. 100
- B. 300
- C. 500
- D. 700**

ITEM 216

Paula raised money for a local charity. She knows that $\frac{3}{4}$ of the money she raised was from magazine sales. Paula raised a total of \$250. Which expression shows the best way to find the amount of money Paula raised from magazine sales?

A. $250 \cdot \frac{1}{4}$

B. $250 - 250\left(\frac{3}{4}\right)$

C. $250 \cdot \frac{3}{4}$

D. $250\left(\frac{3}{4}\right) + 250\left(\frac{1}{4}\right)$

Item 217

Ms. McDuffy bought $2\frac{1}{2}$ yards of fabric that costs \$7.90 per yard. She also bought $3\frac{3}{4}$ yards of fabric that costs \$9.16 per yard. What is the total cost of the fabric?

- A. \$17.06
- B. \$54.10**
- C. \$81.74
- D. \$106.63

ITEM 218

Holly and Mark plan to use their holiday bonuses to buy a used car for \$3,300. Holly's bonus is 62% of the car's price. Mark's bonus is 0.54 of the car's price. What is the total amount of the bonuses Holly and Mark will receive?

- A. \$2,046.00
- B. \$2,063.82
- C. \$3,828.00**
- D. \$5,322.58

ITEM 219

Patty works at a souvenir shop. Out of 440 items sold, $\frac{4}{5}$ were sweatshirts. Twenty-five percent of the other items sold were baseball caps. What percent of the total number of items sold were baseball caps?

- A. 5%
- B. 20%
- C. 22%
- D. 25%

ITEM 220

A tax-free store at an international airport pays two fees when a customer uses a credit card to make a purchase. The two fees include a flat fee of \$0.25 and a processing fee equal to 1.85% of the dollar amount of purchase. If a customer makes a \$48.00 purchase using a credit card, then what is the amount, in dollars and cents, that the store pays in fees on this purchase?

Round your answer, if needed, to the nearest cent.

1.14

\$1.14 _____

ITEM 221

Gavin created a drawing inside of a rectangle. The rectangle has a length of 2 feet and a width of $1\frac{1}{2}$ feet. Gavin would like to create a scaled enlargement of his drawing by increasing both the length and width of the rectangle by 150%. By how many square feet will the area of the enlargement increase?

Enter your answer in decimal form below.
Enter only your numeric answer.

15.75

ITEM 222

Leah has a garden in the shape of a rectangle. The length of the garden is 2.5 meters and the width of the garden is 1.75 meters. Leah wants to increase both the length and width of her garden by 20%.

What will be the perimeter, in meters, of her enlarged garden? Enter your answer below.

10.2

ITEM 223

Johnishia and Jayden are playing a math game. For each question answered correctly, a player scores 175 points. For each question answered incorrectly, a player scores -45 points. At the end of the game, Johnishia answered 16 questions correctly and 8 questions incorrectly; Jayden answered 15 questions correctly and 5 questions incorrectly.

Select the statement that is true for this situation.

- A. Johnishia wins the game by 40 points.
- B. Jayden wins the game by 350 points.
- C. Johnishia wins the game by 175 points.
- D. Jayden wins the game by 700 points.

ITEM 224

Aysha works on Saturdays. She gets paid \$10 per hour for the first 6 hours that she works. If her work extends beyond 6 hours, she earns $1\frac{3}{4}$ times her hourly rate. Aysha's work day for last Saturday is described in the list below.

She worked from 8:30 AM to 12:15 PM.
She took an unpaid 30-minute lunch break.
After lunch, she worked until 4 PM.

How much money did Aysha earn last Saturday? Show or explain all of the steps you used to determine your answer. Enter your answer and your work or your explanation below.

The time Aysha worked last Saturday: 3 hours and 45 minutes + 3 hours and 15 minutes = 7 hours

The money she earned: $10 \times 6 + 1\frac{3}{4} \times 10 \times 1 = 77.5$

ITEM 225

For his little brother's birthday, Sage is designing plans for a sandbox. The sandbox has the shape of a square; each side length measures 1.6 meters. Just before building, Sage decided to increase the side lengths of the sandbox by 25%.

By how many square meters will the area of the garden increase?

Enter your answer below.

1.44

ITEM 226

Keegan's grandmother made her a quilt. The quilt is in the shape of a rectangle.

The length is 6 feet.

The width is 4 feet.

Keegan decides to make a smaller quilt. She decides to decrease both the length and width of her grandmother's quilt by 25%. How many fewer feet will the perimeter of the smaller quilt be than the original?

Enter your answer below.

5
5.0

ITEM 227

Keegan's grandmother made her a quilt. The quilt is in the shape of a rectangle.

The length is 6 feet.

The width is 4 feet.

Keegan wants to make a smaller quilt. She decides to decrease both the length and width of her grandmother's quilt by 25%. What will be the area, in square feet, of the smaller quilt?

Enter your answer below.

13.5

13.50

ITEM 228

For his little brother's birthday, Sage is designing plans for a sandbox. The sandbox has the shape of a square; each side length measures 1.6 meters. Just before building, Sage decided to increase the side lengths of the sandbox by 25%.

By how many square meters will the area of the garden **increase**?

Enter your answer below.

1.44

ITEM 229

For his little brother's birthday, Sage is designing plans for a sandbox. The sandbox has the shape of a square; each side length measures 1.6 meters. Just before building, Sage decided to increase the side lengths of the sandbox by 25%.

What will be the perimeter, in meters, of the enlarged sandbox?

Enter your answer below.

8
8.0

Expressions and Equations

7.EE.B.04

Items 230-260

ITEM 230

Francis' admission to the basketball game is \$10.50. He also shares the cost of a pizza with three friends. Francis paid a total of \$14.25 for the pizza and his admission. Which equation can be used to find the cost of the pizza, p ?

A. $10.50 + p = 14.25$

B. $10.50 + \frac{p}{3} = 14.25$

C. $10.50 + \frac{p}{4} = 14.25$

D. $\frac{10.50 + p}{3} = 14.25$

ITEM 231

Solve for x .

$$10x + 5 = -32$$

A. $x = -2.7$

B. $x = -3.7$

C. $x = -270$

D. $x = -370$

ITEM 232

Opening a savings account at Bayou Bank requires at least \$250. So far, Emily has \$106. Which inequality shows how many more dollars, d , Emily needs to open the savings account?

A. $d + 106 \geq 250$

B. $d + 106 \leq 250$

C. $d - 106 \geq 250$

D. $d - 106 \leq 250$

ITEM 233

An empty box weighs 6 ounces. Jenna puts 12 calculators in the box. The total weight of the box and calculators is 96 ounces. Which equation models the weight, w , in ounces of each calculator?

A. $6w + 12 = 96$

B. $6 + 12w = 96$

C. $6 + 96 = 12w$

D. $12 + 96 = 6w$

ITEM 234

A whale begins swimming to its feeding ground, which is 246 miles away. After 12 hours, the whale is 174 miles from the feeding ground. The equation below can be used to find s , the average speed of the whale.

$$246 - 12s = 174$$

What is the average speed of the whale?

- A. 6 miles per hour
- B. 14.5 miles per hour
- C. 20.5 miles per hour
- D. 35 miles per hour

ITEM 235

A farmer sells apples in crates. She charges \$6.00 for each crate plus \$1.25 per pound of apples. The total charge for one crate of apples is \$38.00.

How many pounds of apples are in the crate?

- A. 6.1 pounds
- B. 6.3 pounds
- C. 25.6 pounds**
- D. 30.4 pounds

ITEM 236

Paula conducts a study, recording the total distance a forest has advanced into a grassy valley. She uses this equation, where y is the number of years since Paula's study began, and f is the total number of feet the forest has advanced.

$$f = 3y + 54$$

If the forest has advanced into the valley 90 feet, how many years have passed since Paula's study began?

A. 12 years

B. 30 years

C. 270 years

D. 324 years

ITEM 237

What is the solution to this equation?

$$\frac{x}{2} - 7 = 15$$

A. $x = 4$

B. $x = 11$

C. $x = 16$

D. $x = 44$

ITEM 238

Abe noticed that his age is the solution to the equation $6N + 7 = 55$. How old is Abe?

- A. 6 years old
- B. 8 years old**
- C. 9 years old
- D. 55 years old

ITEM 239

What value of x makes this equation true?

$$7x - 14 = 35$$

A. 2

B. 3

C. 5

D. 7

ITEM 240

Amber takes $\frac{1}{2}$ of her CDs to summer camp. At camp, she gives 3 CDs to friends. She brings 17 CDs home from camp. How many CDs did Amber have at home before she went to camp?

A. 20

B. 28

C. 34

D. 40

ITEM 241

Elaine bought 3 bags of apples. Each bag had the same number of apples. After her family ate 14 of the apples, there was only 1 apple left over. How many apples were in each bag?

A. 3

B. 5

C. 14

D. 15

ITEM 242

There are 75 girls on the dance competition team. The team wants to raise at least \$30,000 for new uniforms. The school will contribute \$10,000 to help pay for the cost. Which inequality best models this situation? Let x represent the amount of money each dance team member will raise.

A. $75x + 30,000 \geq 10,000$

B. $75x + 10,000 \geq 30,000$

C. $10,000x + 75 \leq 30,000$

D. $30,000x + 75 \geq 10,000$

ITEM 243

Sarah is selling water bottles at a football game for \$2.25 each. She spent \$36.75 to purchase the water bottles, ice, and cooler.

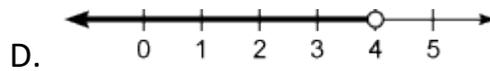
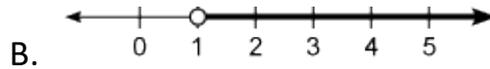
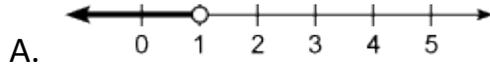
If she wants to make at least \$180 after expenses, what is the fewest number of water bottles she must sell?

- A. 64
- B. 80
- C. 97**
- D. 117

ITEM 244

Which line graph shows the solution set to this inequality?

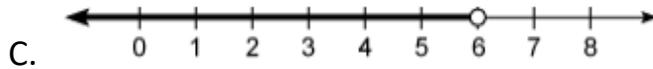
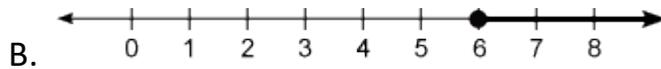
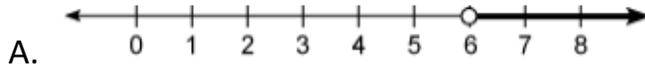
$$-4x + 6 < -10$$



ITEM 245

Which line graph shows the solution set to this inequality?

$$\frac{x}{3} - 2 \leq 0$$



ITEM 246

Solve for x .

$$-3x - 4 \leq 8$$

A. $x \leq -4$

B. $x \geq -4$

C. $x \leq -\frac{4}{3}$

D. $x \geq -\frac{4}{3}$

ITEM 247

Rosemary's class wants to donate at least 120 cans during a two-week food drive. There are 15 students in the class. The first week, each student brings in 3 cans.

Which inequality represents the number of cans, c , each student should bring the second week?

A. $c \leq 5$ cans

B. $c \geq 11$ cans

C. $c \geq 75$ cans

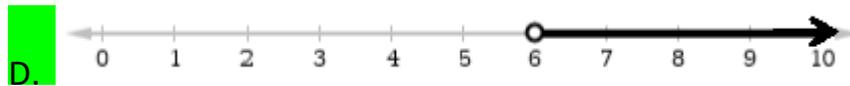
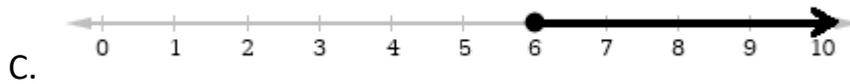
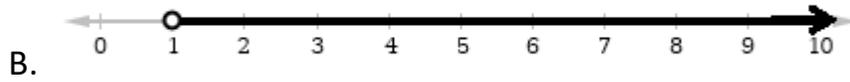
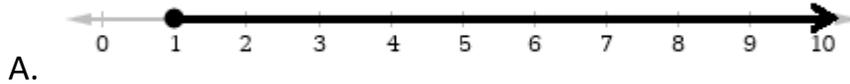
D. $c \geq 165$ cans

ITEM 248

Use the inequality below to answer this question.

$$x - 5 > 1$$

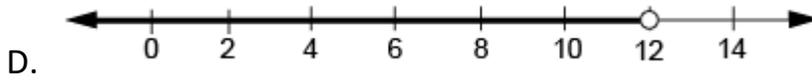
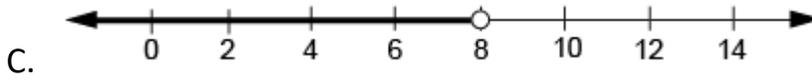
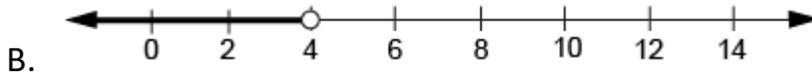
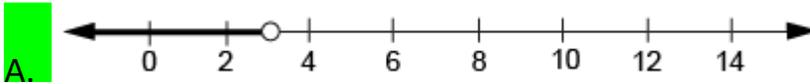
Which graph shows the solution to this inequality?



ITEM 249

Which graph shows the solution set to this inequality?

$$4x < 12$$



ITEM 250

In three years, Karli plans on buying a car. She usually saves \$25 each month and has set a goal of saving \$2150 in 36 months. She writes the equation $2150 = 36(x+25)$ to represent her savings situation.

- Show how to solve the equation for the value of x .
- Write a sentence to explain what the variable x represents.
- Determine the amount that Karli must save each month in order to meet her savings goal.

Enter answer below your solution, your sentence, and the amount that must be saved each month.

$$x + 25 = \frac{2150}{36} \rightarrow x \approx 34.73.$$

x is the amount of additional money she needs to save for her goal.

Karli must save $x+25=59.73$ for her saving goal.

ITEM 251

To test for pollutants, a biologist collected water from Lake Pontchartrain and placed it in a tank. The biologist removed a sample of 15.61 liters from the tank.

This sample was $3\frac{2}{5}$ liters more than $\frac{1}{8}$ of the total volume of water in the tank.

What was the total volume of water in the tank before the biologist removed the sample?

Write and solve an equation or provide an explanation about how you found the total volume of water in the tank.

Enter your answer and your work or explanation below.

v = the total volume of water in the tank

$$15.61 - 3\frac{2}{5} = \frac{1}{8}v \rightarrow v = 97.68$$

ITEM 252

Ryan and his friends went to a basketball game. They paid \$95 for 5 tickets and 5 sodas.

Each ticket cost the same amount.

The sodas cost \$2.50 each.

The equation $5(x+2.5)=95$ can be used to determine, x , the cost of each ticket. Ryan solved the equation and calculated the cost of each ticket as \$18.50. Ryan's ticket cost was incorrect.

Part A

What process could Ryan have used to be certain that his answer was correct?

Part B

Solve the equation and determine cost of each ticket. Be sure to show each step you used when solving the equation.

Enter the process that Ryan could have used, the correct steps for solving the equation, and the ticket cost below. Be sure to label each part.

Part A

$$5 \cdot (18.5 + 2.5) = 105 \neq 95$$

Part B

$$x = \frac{95}{5} - 2.5 = 16.5$$

ITEM 253

Sydney exercised by stretching and jogging for 4 days last week.

She stretched for 11 minutes each day.

She jogged for an equal number of minutes on each of the 4 days.

She exercised for a total of 264 minutes during the 4 days.

Kimberly also exercised by stretching and jogging for 4 days last week.

She stretched for a total of 80 minutes during the 4 days.

She jogged for an equal number of minutes on each of the 4 days.

She exercised for a total of 260 minutes during the 4 days.

Determine the number of minutes that Sydney jogged on each of the 4 days and the number of minutes that Kimberly jogged on each of the 4 days. Write and solve equation for each girl. Be sure to show all your steps that you used when solving each equation to determine your answers.

Enter your equations, your steps, and your answers below.

Sydney exercised j minutes by jogging each day:

$$(11 + j) \cdot 4 = 264 \rightarrow j = 55$$

Kimberly exercised k minutes by jogging each day:

$$80 + 4k = 260 \rightarrow k = 45$$

ITEM 254

A kitten's mass at birth was 0.09 kilogram. The kitten gained approximately 0.084 kilogram each week. After how many weeks is the kitten's mass 1.098 kilograms?

A. 6

B. 12

C. 13

D. 25

ITEM 255

Dakota is a lifeguard who also has the responsibility of scrubbing the pool completely clean at the end of each summer season. When full, the pool holds 10,000 gallons of water. Dakota must drain at least $\frac{3}{4}$ of the volume of water before she can start cleaning it. In drain mode, the water volume of the pool is decreased by approximately 1,500 gallons each hour.

How many hours will Dakota have to wait before she can begin cleaning the pool?

A. $1\frac{2}{3}$

B. 5

C. $6\frac{2}{3}$

D. 8.9

ITEM 256

Macy decided that she wants to train for the cross-country track team. She already runs 2 miles per week, but she plans to increase the number of miles that she runs each week by 2.5 until she is running 12 miles each week.

If x represents the number of weeks, then which equation can be used to determine the number of weeks that it will take Macy to reach her goal?

A. $2 + 2.5 + x = 12$

B. $(2 + 2.5) \cdot x = 12$

C. $2 \cdot (2.5 + x) = 12$

D. $2 + 2.5x = 12$

ITEM 257

Thomas rented 1 speaker and 5 CDs for a party. To rent the speaker and CDs it cost Thomas \$54.39.

- The speaker cost \$43.89 to rent.
- The CDs all cost the same amount each to rent.

What amount, in dollars, did Thomas rent each CD for?
Enter your answer below.

2.1
2.10

ITEM 258

A snowball stand sells only one size of snowballs for \$4.00 each. The cost to make one snowball is \$0.25. In addition to the cost of making snowballs, the stand has operating expenses of \$500 per week. The owner's goal is to make a profit of at least \$250 each week.

Which inequality represents the number of snowballs, n , that need to be sold each week in order to make \$250 profit?

A. $3.75n + 500 \geq 250$

B. $3.75n + 500 \leq 250$

C. $3.75n - 500 \geq 250$

D. $3.75n - 500 \leq 250$

ITEM 259

A snowball stand sells only one size of snowballs for \$4.00 each. The cost to make one snowball is \$0.25. In addition to the cost of making snowballs, the stand has operating expenses of \$500 per week. The owner's goal is to make a profit of at least \$250 each week.

What is the minimum number of snowballs that the stand must sell each week in order to meet its weekly profit goal?

Enter only the number that represents your answer below.

200

ITEM 260

A community service organization has decided to turn a vacant lot into a community garden. They decide to raise the money by selling t-shirts.

- Each t-shirt will cost the organization \$8.00.
- They will sell the t-shirts for \$25.00 each.
- The organization has operating expenses of \$1040.00 per month.
- Their goal is to make a profit of at least \$500 per month for their service project.

Using x to represent the number of t-shirts, write and solve an inequality to determine the minimum number of t-shirts that need to be sold each month in order for the organization to meet its monthly goal. State what your solution means in the context of the problem.

Enter your inequality, the solution set, and a statement of what the solution means in the context of the problem below.

$$(25 - 8)x - 1040 \geq 500 \rightarrow x \geq 90.59$$

A minimum of 91 t-shirts needs to be sold for the goal.

Geometry

7.G.A.01

Items 261-268

ITEM 261

A wall map has a scale of 128 miles = 6 inches. The distance between Springfield and Lakeview is 2 feet on the map. What is the actual distance between Springfield and Lakeview?

- A. 1.13 miles
- B. 42.7 miles
- C. 384 miles
- D. 512 miles**

ITEM 262

The yearbook staff enlarges a picture with a length of 5 inches and a width of 7 inches by a scale factor of 3. The staff decides the enlarged picture is too large and reduces it by a scale factor of 0.5. Will the final image of the picture fit in an area of 80 square inches?

- A. Yes, the area of the picture is 35 square inches.
- B. Yes, the area of the picture is 78.75 square inches.**
- C. No, the area of the picture is 157.5 square inches.
- D. No, the area of the picture is 315 square inches.

ITEM 263

The scale on a house blueprint shows that 1 inch equals 4 feet. The length of the garage on the blueprint is 5.5 inches. What is the actual length of the garage?

- A. 8.5 feet
- B. 9.5 feet
- C. 20 feet
- D. 22 feet**

ITEM 264

The scale on a model boat shows that 2 inches is equal to 30 feet of the actual boat being modeled. The model boat is 10 inches long. What is the length of the actual boat being modeled?

- A. 6 feet
- B. 15 feet
- C. 60 feet
- D. 150 feet**

ITEM 265

The scale for a map is 20 miles = $\frac{1}{2}$ inch. The distance between two towns on the map is $3\frac{3}{4}$ inches. What is the actual distance between these towns?

- A. 38 miles
- B. 75 miles
- C. 135 miles
- D. 150 miles**

ITEM 266

To make a monster appear large in a movie, a human actor wore a costume and walked through a scale model of a city. The scale used was 1 inch = 15 feet. The actor is 60 inches tall. How tall does the monster appear in the movie?

- A. 4 feet
- B. 75 feet
- C. 720 feet
- D. 900 feet**

ITEM 267

The distance from New Orleans to Nashville is 4.5 centimeters on a map. The actual distance between the cities is about 450 miles. Which scale is on the map?

- A. 1 centimeter = 10 miles
- B. 1 centimeter = 100 miles**
- C. 10 centimeters = 1 mile
- D. 100 centimeters = 1 mile

ITEM 268

The state capitol building in Baton Rouge, Louisiana, is 450 feet tall. Ella's scale model of the building uses the scale 25 feet = 10 inches. How tall is Ella's model?

- A. 18 inches
- B. 180 inches**
- C. 425 inches
- D. 1,125 inches

Geometry

7.G.A.02

Items 269-274

ITEM 269

Meredith wants to create a unique triangle. Which of the conditions below would create her unique triangle?

- A. In $\triangle ABC$, $\angle A = 120^\circ$, side $\overline{AB} = 6$ cm, and $\angle B = 80^\circ$.
- B. In $\triangle ABC$, $\angle A = 30^\circ$, $\angle B = 60^\circ$, and side $\overline{BC} = 12$ cm.
- C. In $\triangle ABC$, $\angle A = 50^\circ$, $\angle B = 45^\circ$, and $\angle C = 85^\circ$.
- D. In $\triangle ABC$, side $\overline{AB} = 4$ cm, side $\overline{BC} = 4$ cm, and side $\overline{AC} = 10$ cm.

ITEM 270

Which statement explains whether a triangle can have side lengths of 14, 15, and 30?

- A. It can because the sum of the smaller side lengths is less than the larger side length.
- B. It can because the sum of the larger side lengths is greater than the smaller side length.
- C. It cannot because the sum of the smaller side lengths has to be equal to the larger side length.
- D. It cannot because the sum of the smaller side lengths has to be greater than the larger side length.

ITEM 271

Which of the following measurements create a unique triangle?

- A. 40 cm, 40cm, 70cm
- B. 5 cm, 6 cm, 10 cm**
- C. 4 cm, 9 cm, 15 cm
- D. 60 cm, 60cm, 60 cm

ITEM 272

Jasmine likes to make quilts with her grandmother. They are making a triangle quilt block pattern. If the lengths of two sides of each triangle measure 9 inches and 12 inches, which could not be the length of the third side?

- A. 5 inches
- B. 10 inches
- C. 20 inches
- D. 30 inches**

ITEM 273

Select **three** sets of measurements that could be the side lengths of a triangle.

A. 8 mm, 16 mm, 26 mm

B. 16 mm, 16 mm, 16 mm

C. 18 mm, 21 mm, 24 mm

D. 19mm, 29 mm, 49 mm

E. 21 mm, 21 mm, 30 mm

ITEM 274

Select **three** sets of measurements that could be the interior angle measures of a triangle.

A. 20°, 40°, 120°

B. 30°, 60°, 90°

C. 40°, 50°, 100°

D. 55°, 60°, 65°

E. 80°, 80°, 80°

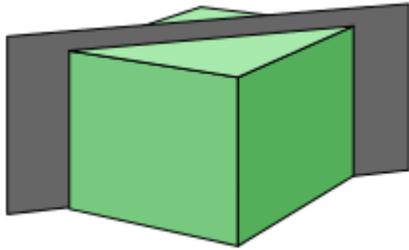
Geometry

7.G.A.03

Items 275-280

ITEM 275

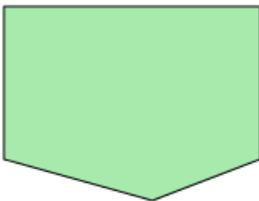
Use the diagram below to answer the question.



Which shape best represents the 2-dimensional shape formed by the slice made by the plane through the vertices of the cube shown?



A.



B.

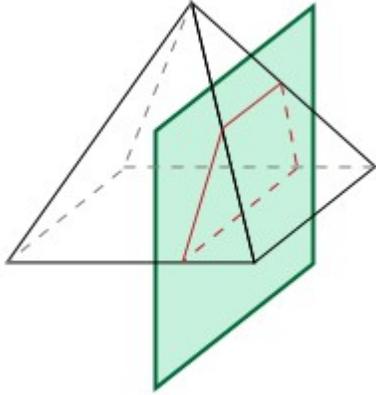


C.



ITEM 276

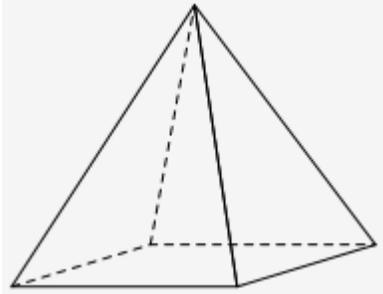
What shape is created by the intersection of the plane with this pyramid?



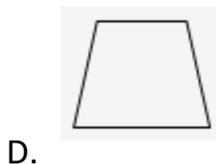
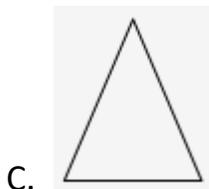
- A. triangle
- B. square
- C. trapezoid**
- D. rhombus

ITEM 277

The figure below is a square pyramid.

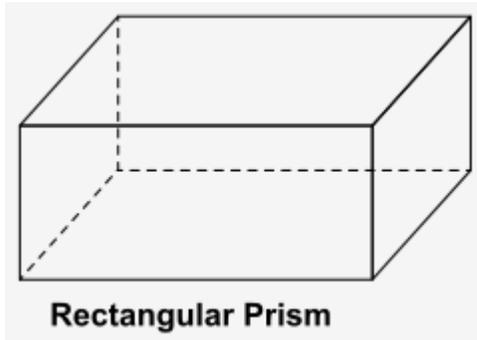


Which of the following shapes is not a cross section from the square pyramid?

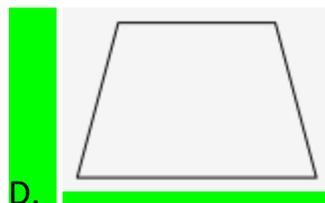
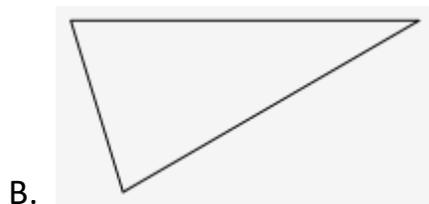
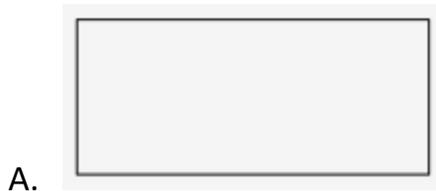


ITEM 278

The figure below is a rectangular prism.



Which of the following shapes is not a cross section from the rectangular prism?



ITEM 279

Brianna is hosting a party and preparing a cheese tray. She has a large wedge of cheese in the shape of a triangular prism. If she makes the first cut down the center so that she has two equally sized smaller wedges, which two-dimensional plane sections could result from the cut? Select **two** correct answers.

A. triangle

B. rectangle

C. trapezoid

D. hexagon

E. circle

ITEM 280

Gavin used clay to make a right cylinder which he plans on slicing into two congruent halves. Which two-dimensional plane sections could result from the slice Gavin makes? Select **two** correct answers.

A. rectangle

B. right triangle

C. circle

D. pentagon

E. hexagon

Geometry

7.G.B.04

Items 281- 297

ITEM 281

The circumference of a circle is 32π . What is the radius of this circle?

A. 8

B. 16

C. 32

D. 64

ITEM 282

The circumference of a circular tabletop is 72π inches. What is the area, in square inches, of the tabletop?

- A. 36π in²
- B. 144π in²
- C. $1,296\pi$ in²
- D. 5185π in²

ITEM 283

A circular garden at a park has a diameter of 20 feet. A contractor is developing plans to build a 5-foot-wide walkway around the garden.

What is the area of the planned walkway to the nearest square foot?

A. 393

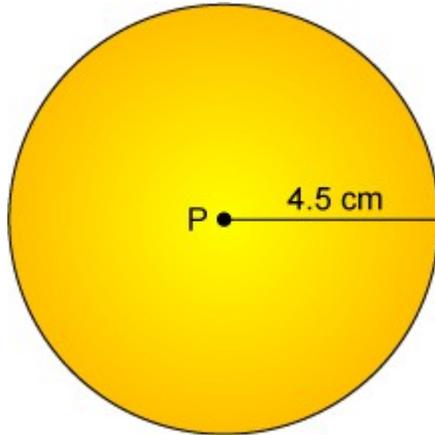
B. 707

C. 785

D. 1,571

ITEM 284

Use the circle below to answer this question.



Point P is at the center of the circle. What is the length of the circumference of the circle, rounded to the nearest tenth of a centimeter?

- A. 14.1 centimeters
- B. 28.3 centimeters**
- C. 63.6 centimeters
- D. 127.2 centimeters

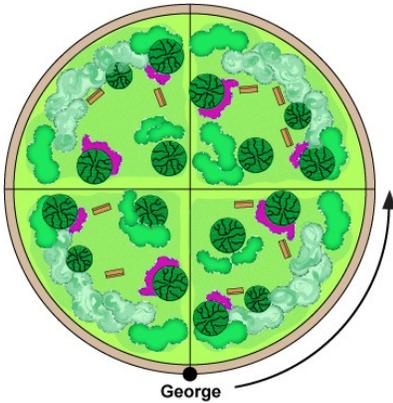
ITEM 285

A nail has a circular head with a diameter of 0.40 centimeters. What is the area of the nail's head, rounded to the nearest hundredth of a square centimeter?

- A. 0.13 square centimeter
- B. 0.40 square centimeter
- C. 0.50 square centimeter
- D. 0.63 square centimeter

ITEM 286

Use the picture of a garden below to answer this question.



George walks around one quarter of a circular garden. He walks a total of 30 meters. To the nearest tenth of a meter, what is the radius of the circular garden?

- A. 7.5 meters
- B. 9.5 meters
- C. 19.1 meters**
- D. 30.0 meters

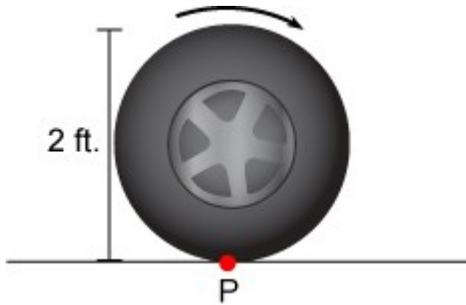
ITEM 287

The radius of circle P is 24 centimeters. The radius of circle Q is 8 centimeters. Which statement correctly compares the area of circle P with the area of circle Q?

- A. The area of circle P is 3 times the area of circle Q.
- B. The area of circle P is 6 times the area of circle Q.
- C. The area of circle P is 9 times the area of circle Q.**
- D. The area of circle P is 12 times the area of circle Q.

ITEM 288

The car tire below touches the road at point P. The diameter of the tire is 2 feet.



Amir rolls the tire to the right until point P touches the ground again. About how far did the tire move along the road?

- A. 2 feet
- B. 3 feet
- C. 5 feet
- D. 6 feet**

ITEM 289

Four students drew circles. Then each student measured the diameter and circumference of his circle. Which student made an error?

- A. Evan: The diameter of my circle is 30 inches. The circumference is about 100 inches.
- B. Dwight: The diameter of my circle is 10 inches. The circumference is about 30 inches.
- C. Edwin: The diameter of my circle is 2 centimeters. The circumference is about 6 centimeters.
- D. Royce: The diameter of my circle is 15 centimeters. The circumference is about 90 centimeters.

ITEM 290

A pizza has a diameter of 19 inches. Which estimate is closest to the circumference of the pizza?

- A. 20 inches
- B. 40 inches
- C. 60 inches**
- D. 80 inches

ITEM 291

A pond is shaped like a circle. The diameter of the pond is 100 yards.

- Mary ran along the edge of the pond to the opposite side.
- Chuck swam straight across the pond to the opposite side.

Which statement best compares the distances Mary and Chuck moved?

- A. Mary ran about the same distance as Chuck swam.
- B. Mary ran about 1.5 times the distance Chuck swam.**
- C. Mary ran about 3 times the distance Chuck swam.
- D. Mary ran about 6 times the distance Chuck swam.

ITEM 292

The ordered pair $(-5, 0)$ is a point on a circle. The center of the circle is at point $(0, 0)$. What is the area of the circle? Use 3.14 for π and round to the nearest tenth.

- A. 19.6 square units
- B. 78.5 square units**
- C. 246.5 square units
- D. 314 square units

ITEM 293

Jose is watering his square lawn that measures 25 feet on each side. He places the sprinkler at the center of the lawn to water a circular area with a diameter measuring the length of the lawn. How much of the lawn is not being watered? Use 3.14 for π .

A. 134.375 square feet

B. 490.625 square feet

C. 1,337.5 square feet

D. 1,962.5 square feet

ITEM 294

The radius of a circle is 4.53 in. What is the length of the circumference of the circle?

- A. 14.2 inches
- B. 25.1 inches
- C. 28.5 inches**
- D. 31.4 inches

ITEM 295

The diameter of the top of Arlesha's soda can is 2.75 inches. What is the length of the circumference of the top of the soda can?



- A. 4.32 inches
- B. 5.94 inches
- C. 8.64 inches**
- D. 8.80 inches

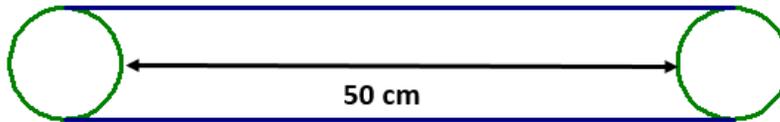
ITEM 296

The tires on a bicycle each have a diameter of 16 inches. How far will the bicycle tires travel in 75 rotations?

- A. 50.24 inches
- B. 100.48 inches
- C. 3,768 inches**
- D. 7,536 inches

ITEM 297

A machine has a belt that fits around two identically-sized wheels. The radius of each wheel is 12 centimeters, and the distance between the wheels is 50 centimeters. The figure is not drawn to scale.



The belt is old and must be replaced. What length of belt, in centimeters, should be ordered as the replacement?

- A. 98
- B. 175.36
- C. 196
- D. 223.36**

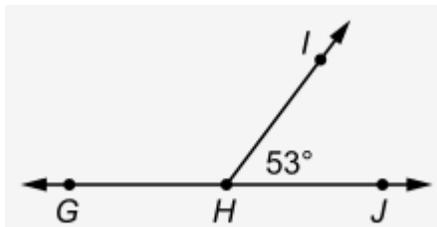
Geometry

7.G.B.05

Item 298-300

ITEM 298

What is the measure of $\angle IHG$?



- A. $m\angle IHG = 37^\circ$
- B. $m\angle IHG = 38^\circ$
- C. $m\angle IHG = 127^\circ$**
- D. $m\angle IHG = 128^\circ$

ITEM 299

$\angle WXZ$ and $\angle YXZ$ are supplementary angles. The measure of $\angle WXZ$ is 5 times the size of the measure of $\angle YXZ$. What is the measure, in degrees, of $\angle WXZ$?

- A. 30°
- B. 36°
- C. 144°
- D. 150°**

ITEM 300

$\angle NOP$ and $\angle QOP$ are complementary angles. The ratio of the measure of $\angle NOP$ to the measure of $\angle QOP$ is 1 to 2. What is the measure, in degrees, of $\angle NOP$?

Enter your answer below.

30

30.0

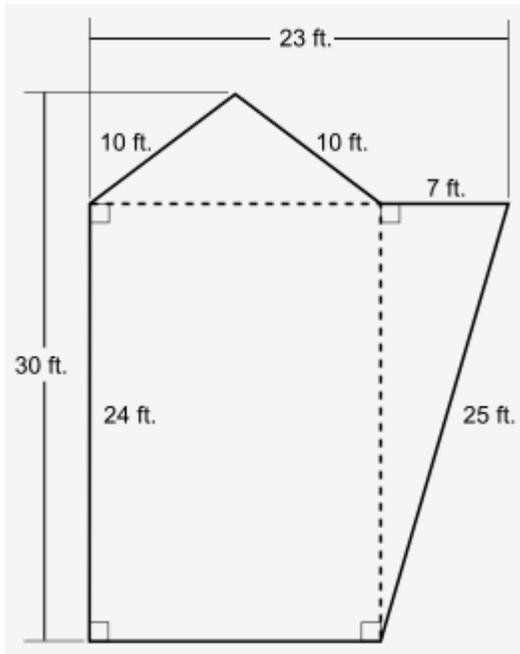
Geometry

7.G.B.06

Items 301-308

ITEM 301

Use the floor plan to answer the question.



The owner of a shopping mall wants to install a carpeted play area for children. The dimensions of the play area are shown.

How many square feet of carpet are needed for the play area?

A. 516

B. 548

C. 684

D. 764

ITEM 302

A company manufactures candies in the shape of small cubes that measure 2 centimeters on each side. The candies are stacked on top of each other to fit snugly inside a package.

If the volume of the package is 96 cubic centimeters, how many candies fit in each package?

A. 8

B. 12

C. 24

D. 48

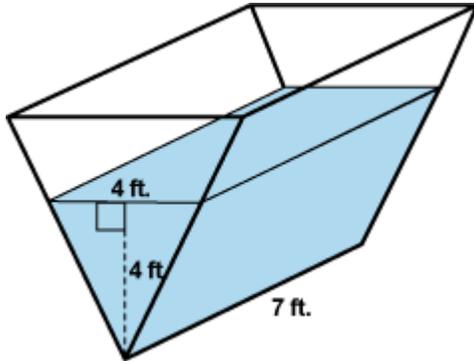
ITEM 303

The movie theater received a shipment of candy boxes in a carton that has a volume of about 64,000 cubic inches. Each candy box is 6 inches by 5 inches by $\frac{1}{2}$ inch. The carton is completely full. About how many candy boxes are in the carton?

- A. 1,000
- B. 2,000
- C. 4,000**
- D. 10,000

ITEM 304

Teresa filled this water trough to a depth of 4 feet.



What is the volume of water in the trough?

A. 28 ft.^3

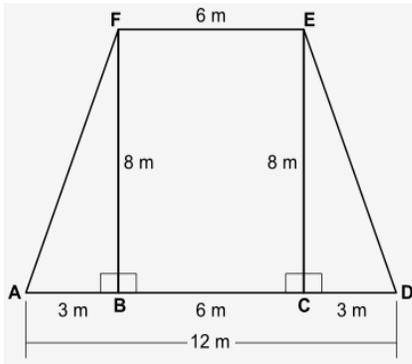
B. 56 ft.^3

C. 100 ft.^3

D. 112 ft.^3

ITEM 305

Which expressions could be used to find the area of the trapezoid?

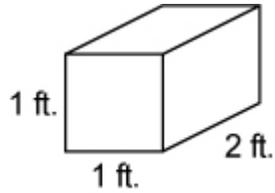


- I. $3 \cdot 8 + 48$
- II. $\frac{1}{2} (12 + 6)$
- III. $24 + 48$
- IV. $\frac{1}{2} \cdot 8 \cdot 3 + \frac{1}{2} \cdot 8 \cdot 3 + 8 \cdot 6$
- V. $3 \cdot 8 + 6 \cdot 8$

- A. I and III
- B. I, III, and V
- C. I, II, III, and IV
- D. I, III, IV, and V**

ITEM 306

Sherise wants to paint the outside of this box.

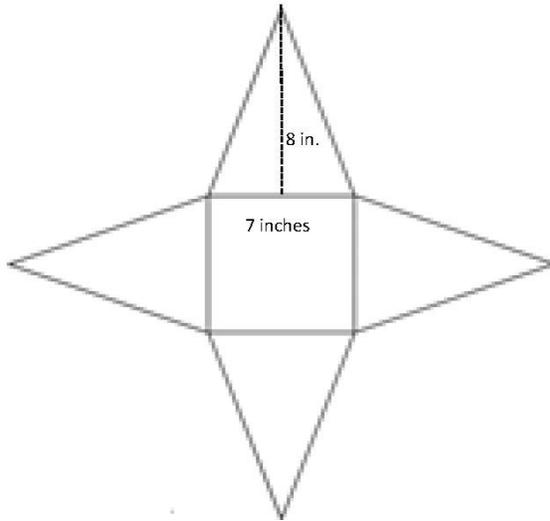


What is the total area that Sherise needs to paint?

- A. 2 ft.^2
- B. 4 ft.^2
- C. 5 ft.^2
- D. 10 ft.^2

ITEM 307

Sarah folds this pattern into a square pyramid.

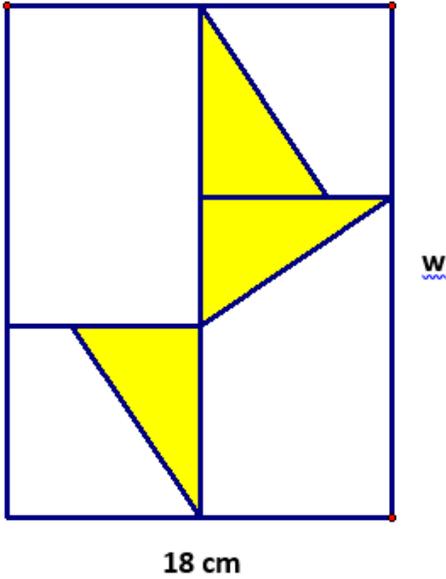


What is the surface area of Sarah's pyramid?

- A. 112 square inches
- B. 161 square inches**
- C. 224 square inches
- D. 273 square inches

ITEM 308

Mary is designing a quilt block. She draws three identical triangles arranged inside of a rectangle, as shown. The figure is not drawn to scale.



The ratio of the length of the rectangle to the width of the rectangle is 3 to 4. If the length of the rectangle is 18 centimeters, then what is the area, in square centimeters, of one of the triangles?

Enter your answer below.

27
27.0

Statistics and Probability

7.SP.A.01

Items 309- 317

ITEM 309

Ted owns a shop that opens every day for breakfast, lunch, and dinner. He has a regular menu and a menu with only specials. He wants to calculate how many of his customers order something off of the regular menu. Ted selected a random sample of 100 customers who had the dinner at the diner during a four-month interval. He concluded that 65% of these customers ordered from the regular menu. Which statement about the sample group is true?

- A. The sample might not be representative of the population because it only included dinner customers.
- B. No generalizations can be made from the sample. The sample size of 100 is too small.
- C. The sample is the percentage of customers who order daily specials.
- D. The sample shows that exactly 65% of Ted's customers ordered regular menu items.

ITEM 310

Max wants to find out the average number of video games purchased per student in his middle school last year. He plans to survey a sample of students.

Which sampling method will result in the most reliable data?

- A. surveying 100 randomly selected seventh graders
- B. surveying 1 randomly selected student from each grade
- C. surveying 100 randomly selected students at a school basketball game
- D. surveying 100 randomly selected students from a school directory**

ITEM 311

Loesha is taking a survey of middle school and high school students. She wants to know the average number of hours of homework students have each week at each grade level. This list shows the grade levels of the students who answered her survey.

6, 6, 6, 6, 6, 7, 7, 7, 7, 7, 7, 8, 8, 8, 8, 9, 10, 11, 11, 11, 11, 12, 12, 12, 12

Which is the **best** way for Loesha to improve her survey?

- A. avoid asking her friends to complete the survey
- B. try to get more responses from 9th and 10th graders**
- C. give the survey only to students who get good grades
- D. ask students to provide answers in both hours and minutes

ITEM 312

Engineers tested the safety of a spacesuit 10 times. The test showed that the suit was safe each time. This list shows the temperatures, in degrees Fahrenheit, during each test.

76, 68, 81, 91, 72, 82, 63, 70, 75, 59

A space agency plans to use the suit on a day with a predicted temperature of 21°F. Based on the data, which statement **best** explains whether the suit is likely to be safe?

- A. The suit will be safe because it was safe in every test.
- B. The suit may not be safe because it was tested only 10 times.
- C. The suit will be safe because it was safe at even hotter temperatures.
- D. The suit may not be safe because it was not tested at low temperatures.**

ITEM 313

This list shows the heights, in centimeters, of 8 players on Shaquilla's basketball team.

180, 172, 183, 177, 193, 187, 187, 182

The basketball coach wants to compare the heights with each player's shoe size to see whether shoe size can be predicted from height. Which prediction would be **least** valid?

- A. predicting the shoe size of a player who is 160 centimeters tall
- B. predicting the shoe size of a player who is 177 centimeters tall
- C. predicting the shoe size of a player who is 181 centimeters tall
- D. predicting the shoe size of a player who is 190 centimeters tall

ITEM 314

The student council at Washington High School wants to find out what students think of the new mascot. Which polling method is **most** likely to generate an unbiased and useful sample?

- A. asking one teacher from each grade
- B. asking every student at a football game
- C. asking all players on the basketball team
- D. asking one student from each classroom**

ITEM 315

Charlotte needs to survey a random sample of students at her school in order to decide on a t-shirt design for a spirit shirt. Which group would be the best representation of her school?

- A. a group of cheerleaders
- B. the students she sits with at lunch
- C. her science class
- D. two students from each homeroom**

ITEM 316

Nadia will survey 50 students in her town to find out what their favorite summertime activity is. Which group would likely give the **best** representation for her survey?

- A. 50 students at a library
- B. 50 students in her school**
- C. 50 students at a shopping mall
- D. 50 students taking swimming lessons

ITEM 317

A school district wants to increase the number of students who eat breakfast every day. Because there are 20,000 students affected, the district decides to survey a sample of students on what foods and drinks they like and dislike for breakfast. Which groups would be most representative of the opinions of all students in the district?

- A. Randomly selected students in the cafeteria at one of the schools
- B. All students with last names starting with E, H, N, and T
- C. 10% of students randomly selected from each school
- D. All student athletes
- E. Students who are randomly selected by a computer from a list of all students
- F. Students who have been in the district the longest

Statistics and Probability

7.SP.A.02

Items 318- 322

ITEM 318

Milton's teacher asked him to find the average length of the words in the book he was currently reading. He decided to randomly sample the words. The list below represents his findings.

Number of three-letter words: 8

Number of four-letter words: 10

Number of five-letter words: 15

Number of six-letter words: 8

Number of seven-letter words: 5

Number of eight-letter words: 3

Based on this random sampling, what is the average length of the words in his book? Round the answer to the nearest whole number.

A. 5

B. 6

C. 7

D. 8

ITEM 319

There are four members of the seventh grade running for class president. Desiree wants to know who is most likely to win. She surveys a random sampling of 20 of the 173 seventh-grade students. Three students said they would vote for Timothy. Eight students said that would vote for Mylo. Six students said they would vote for Lauren. The rest of the students said they planned to vote for Remi. Given Desiree's findings, who will most likely win the election for class president?

A. Timothy

B. Mylo

C. Lauren

D. Remi

ITEM 320

The number of apps that sixteen randomly selected 7th grade students, in Lagniappe Middle School, have on their electronic devices is 16, 5, 8, 3, 4, 4, 7, 13, 15, 8, 5, 9, 6, 10, 4 and 5. Based on these data, which of the following is the best prediction of the total number of apps all 240 7th graders in Lagniappe Middle School have on their electronic devices?

- A. 100 apps
- B. 1,800 apps**
- C. 2,400 apps
- D. 3,850 apps

ITEM 321

Kimberly, Sydney, and Isabella each surveyed random samples of 30 students in the school's cafeteria about whether or not they eat the Spinach Salad. The results of all three surveys are shown in the table.

Spinach Salad Survey Results	
Student Who Gave the Survey	Number of Students Who Eat the Spinach Salad
Kimberly	12
Sydney	13
Isabella	5

Based on the results of the three surveys, what percentage of the 625 students who eat in the cafeteria each day can be expected to eat the Spinach Salad?

- A. 4% to 24%
- B. 25% to 35%**
- C. 36% to 56%
- D. more than 56%

ITEM 322

Jaylynn surveyed a random sample of 30 students in her school's cafeteria. She wants to know whether or not they eat the coleslaw.

- 12 of the sampled students said they ate the coleslaw.
- A total of 625 students eat lunch in the cafeteria each day.

Based on the results of Jaylynn's survey, how many of the 625 students who eat in the cafeteria can be expected to eat the coleslaw?

Enter your answer below.

250

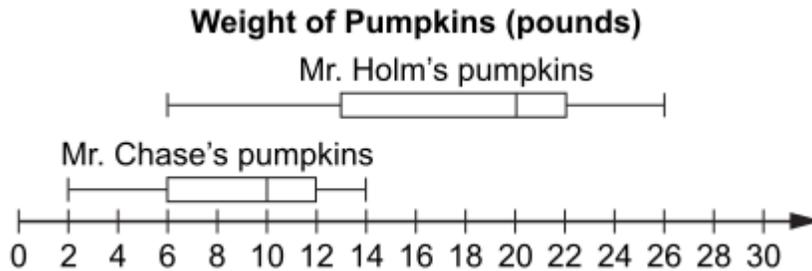
Statistics and Probability

7.SP.B.03

Items 323- 324

ITEM 323

Use the box plots to answer the question.



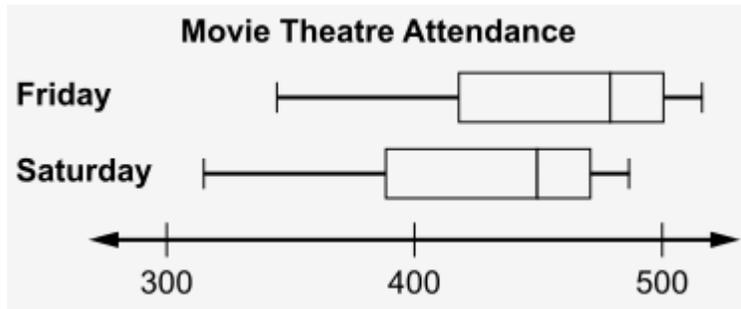
The weights of pumpkins from two pumpkin patches are shown in the box plots. The mean absolute deviation of both data sets is approximately 4 pounds.

Which statement **best** describes the data?

- A. The mean weight of Mr. Holm's pumpkins is 8 pounds greater than the mean weight of Mr. Chase's pumpkins.
- B. The median weight of Mr. Holm's pumpkins is 8 pounds greater than the median weight of Mr. Chase's pumpkins.
- C. The mean weight of Mr. Holm's pumpkins is 10 pounds greater than the mean weight of Mr. Chase's pumpkins.
- D. The median weight of Mr. Holm's pumpkins is 10 pounds greater than the median weight of Mr. Chase's pumpkins.**

ITEM 324

A movie theater kept track of the attendance on Fridays and Saturdays. The results are shown in the box plots below.



Which conclusion can be drawn from the box plots?

- A. Both days' data has the same median and interquartile range.
- B. Friday's data has a greater median and a greater interquartile range than Saturday's data.
- C. Friday's data has a greater interquartile range than Saturday's data, but both data sets have the same median.
- D. Friday's data has a greater median than Saturday's data, but both data sets have the same interquartile range.**

Statistics and Probability

7.SP.B.04

Items 325-325

ITEM 325

The table shows the number of minutes that London and Ayanna each spent reading for pleasure during 5 randomly sampled days.

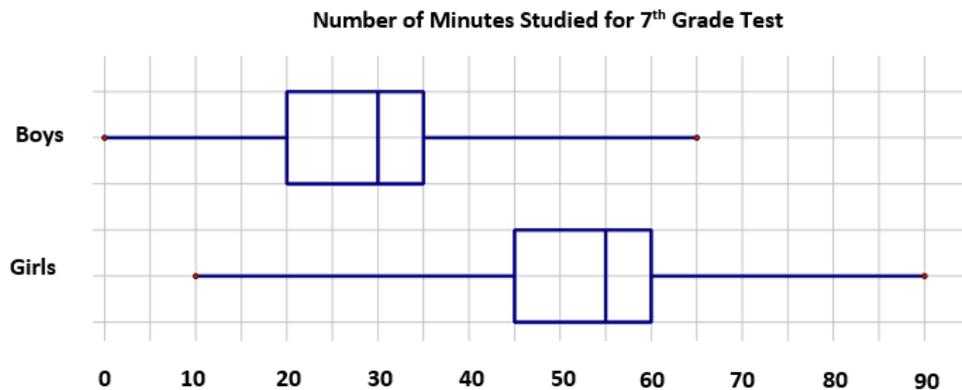
Number of Minutes Spent Reading					
	Day 1	Day 2	Day 3	Day 4	Day 5
London's number of min.	39	27	24	27	33
Ayanna's number of min.	15	15	45	27	18

Select the correct statement that describes the data.

- A. Over the course of 5 randomly selected days, London typically read more because the median of her data is greater.
- B. Over the course of 5 randomly selected days, Ayanna typically read more because the range of her data is greater.
- C. Over the course of 5 randomly selected days, London typically read more because the mean of her data is greater.**
- D. Over the course of 5 randomly selected days, London and Ayanna typically read the same amount because they share the same mean.

ITEM 326

The box plot shows the results of a study survey for 200 7th grade students. One hundred girls and 100 boys were randomly selected from two different schools. They were asked about the typical number of minutes that they spend studying for a math test.



Based on the box plot, which comparison is true?

- A. 7th grade girls typically study for a shorter amount of time when compared to 7th grade boys because of the differences in their interquartile ranges.
- B. 7th grade girls typically study for a shorter amount of time when compared to 7th grade boys because of the differences in their medians.
- C. 7th grade girls typically study for a longer amount of time when compared to 7th grade boys because of the differences in their interquartile ranges.
- D. 7th grade girls typically study for a longer amount of time when compared to 7th grade boys because of the differences in their medians.**

ITEM 327

Sammy and Sally always complete their math homework assignments. The table shows the number of minutes Sammy and Sally spend on math homework during 5 randomly selected days.

Number of Minutes Spent on Math Homework					
	Day 1	Day 2	Day 3	Day 4	Day 5
Sammy's number of min.	15	25	15	30	25
Sally's number of min.	5	15	40	25	20

Based on the data in the table, which is the best comparative statement about the number of daily minutes each student spends on math homework?

- A. On a typical day, Sammy spends more time on math homework because the mean of Sammy's data is greater than the mean of Sally's data.
- B. On a typical day, Sally spends more time on math homework because the mean of Sally's data is greater than the mean of Sammy's data.
- C. On a typical day, Sally spends more time on math homework because the range of Sally's data is greater than the range of Sammy's data.
- D. On a typical day, Sally spends more time on math homework because the range of Sally's data is greater than the range of Sammy's data.

Statistics and Probability

7.SP.C.05

Items 328- 332

ITEM 328

If an event has a probability of 0.86 of taking place, what is the likelihood of that event occurring?

- A. The event is likely. An event that has a probability close to 1 is likely to occur.**
- B. The event is unlikely. The event has a probability less than 1, so it is unlikely to occur.
- C. The event is neither likely nor unlikely.
- D. There is not enough information to determine the likelihood of the event occurring.

ITEM 329

Renae rolls two number cubes labeled 1 through 6.

What is the probability that the sum of the numbers she rolls will be greater than 12?

A. 0

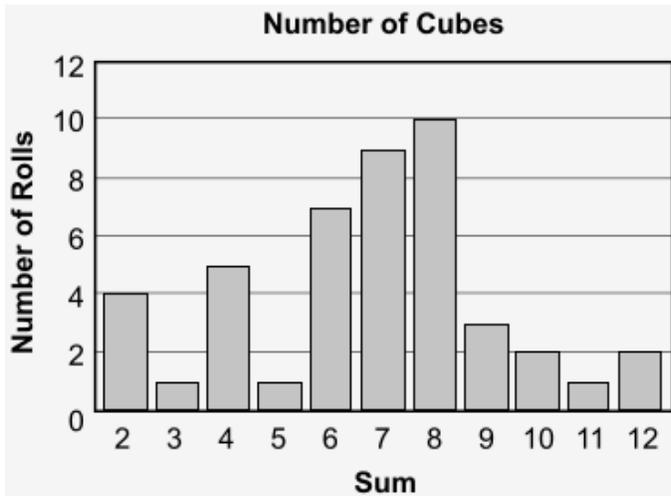
B. $\frac{1}{12}$

C. $\frac{1}{6}$

D. 1

ITEM 330

Louisa rolls two number cubes during a game she plays. Each time she rolls the number cubes, she records the sum of the numbers in this graph.



Based on her results, which word **best** describes the likelihood that the next sum will be 3?

- A. certain
- B. likely
- C. unlikely**
- D. impossible

ITEM 331

Calvin is deciding what activities to do on the weekend. He writes the six letters of his name on pieces of paper, places them in a bag, and picks a piece of paper from the bag without looking.

- Saturday activity: If Calvin chooses C, A, or L, he will play soccer; otherwise, he will play baseball.
- Sunday activity: If Calvin chooses a vowel, he will go to a movie; otherwise, he will go to the arcade.

Which statement is **true** ?

- A. Calvin's Saturday activity choices are equally likely, but his Sunday activity choices are not.
- B. Calvin's Saturday activity choices are not equally likely, but his Sunday activity choices are.
- C. Neither Calvin's Saturday activity choices nor Sunday activity choices are equally likely.
- D. Calvin's Saturday activity choices and Sunday activity choices are equally likely.

ITEM 332

It is highly likely that Malika will randomly select the letter A from a group of letters. From which group of letters could Malika be selecting?

- A. A, E, I, O, U
- B. A, B, C, A, D
- C. A, F, A, G, A, H
- D. A, A, J, A, A, K**

Statistics and Probability

7.SP.C.06

Items 333-338

ITEM 333

Jack will use a random number generator 1,600 times. Each result will be a digit from 1 to 8. Which statement **best** predicts how many times the digit 6 will appear among the 1,600 results?

- A. It will appear exactly 200 times.
- B. It will appear close to 200 times, but probably not exactly 200 times.**
- C. It will appear exactly 300 times.
- D. It will appear close to 300 times, but probably not exactly 300 times.

ITEM 334

Arnold and Jamie are both performing the same experiment. Arnold does 20 trials and gets 7 positive results. Jamie does 10 trials and gets 3 positive results. What is the **best estimate** for the probability of a positive result?

A. $\frac{1}{2}$

B. $\frac{1}{3}$

C. $\frac{1}{4}$

D. $\frac{1}{5}$

ITEM 335

The department of motor vehicles in Smithville reports that 15% of the cars in the city are silver. A specific parking lot has 1,000 cars. Which is the **best** estimate of the number of cars that are silver in this parking lot?

- A. 1–50
- B. 120–170**
- C. 820–870
- D. 950–1,000

ITEM 336

Jason surveyed 50 eighth-grade students about their favorite snacks.

Favorite Snacks

Snack	Number of Classmates
Pretzel sticks	10
Applesauce	4
Potato chips	5
Yogurt	6
Popcorn	25

There are 200 eighth-grade students at Jason's school. What is the **best** estimate of the number of eighth-grade students who would choose popcorn as their favorite snack?

- A. 25
- B. 50
- C. 100**
- D. 175

ITEM 337

Zander places 9 red marbles and 11 blue marbles in a bag. He plans on drawing out one marble, recording its color, and then placing the marble back in the bag.

If he does this 80 times, approximately how many red marbles should Zander expect to draw?

- A. 9 times
- B. 36 times**
- C. 44 times
- D. 45 times

Marques has a bag of colored cubes. Without looking, he draws a cube out of the bag, and replaces the cube back in the bag. He repeats this process multiple times and records the results in the table below.

Color	Frequency
 Orange	26
 Yellow	28
 Green	32
 Red	34

Based on the data collected, what is the best approximation of the probability that he will choose a yellow cube on his next draw?

A. $1/28$

B. $7/30$

C. $4/15$

D. $7/25$

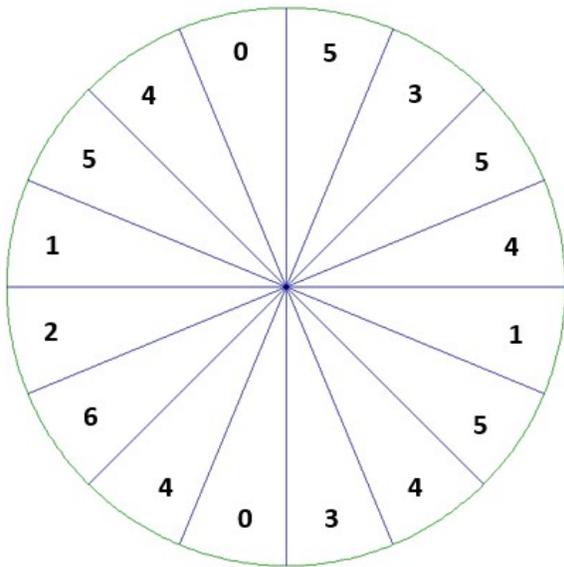
Statistics and Probability

7.SP.C.06

Item 339

ITEM 339

Mr. Z uses a spinning wheel to determine the number of homework problems for each day. The wheel, shown below, has 16 equal sectors.



Mr. Z plans to have students spin the wheel 160 times during the school year. Which table shows the best prediction for the number of homework problems assigned?

A.

Number of problems on HW	0	1	2	3	4	5	6
Expected frequency	10	10	20	10	45	45	20

B.

Number of problems on HW	0	1	2	3	4	5	6
Expected frequency	20	20	40	10	10	20	40

C.

Number of problems on HW	0	1	2	3	4	5	6
Expected frequency	0	40	15	40	25	25	15

D.

Number of problems on HW	0	1	2	3	4	5	6
Expected frequency	20	20	10	20	40	40	10

Statistics and Probability

7.SP.C.07

Items 340-352

ITEM 340

There are 10 students on Dion's chess team. Each week, one student is randomly picked to update the chess team website. Over the last 40 weeks, Dion was picked 12 times. Which statement best describes this result?

- A. Dion was picked a lot less than expected.
- B. Dion was picked a little less than expected.
- C. Dion was picked a little more than expected.
- D. Dion was picked a lot more than expected.**

ITEM 341

Four students are flipping nickels. This table shows the results.

Flipping Nickels

Student	Number of Heads	Number of Tails
Jake	51	49
Hannah	48	52
Shane	29	71
Mariah	45	55

Based on these results, how many of these students are most likely using this bent nickel instead of a regular coin?



- A. 1**
- B. 2
- C. 3
- D. 4

ITEM 342

Kamala dropped a tack onto a corkboard 100 times and used this table to record how it landed.

Tack Experiment

Sample Pictures			
Number of Times	10 times	20 times	70 times
Notes	Stuck straight in corkboard	Stuck and then tipped	Landed upside down on corkboard

Kamala's aunt used an advanced computer program to find that the probability the tack should stick into the corkboard is 28%. Which statement **best** compares this probability to Kamala's results?

- A. In Kamala's experiment, the tack stuck into the board significantly fewer times than expected.
- B. In Kamala's experiment, the tack stuck into the board slightly fewer times than expected.
- C. In Kamala's experiment, the tack stuck into the board a slightly greater number of times than expected.**
- D. In Kamala's experiment, the tack stuck into the board a significantly greater number of times than expected.

ITEM 343

Martin learns there is a 50% chance of rain on Thursday. Which statement must be true?

- A. There is a 50% chance it will be sunny on Thursday.
- B. There is a 50% chance it will **not** rain on Thursday.
- C. There is a 50% chance it will rain on Friday.
- D. There is a 50% chance it will **not** rain on Friday.

ITEM 344

Evan has a bag of red, green, and blue marbles. Evan will pull one marble from the bag at random. The probability the marble will be red is 0.6. Which event has a probability of 0.4?

- A. pulling a blue marble from the bag
- B. pulling a green marble from the bag
- C. pulling a red or blue marble from the bag
- D. pulling a blue or green marble from the bag**

ITEM 345

Jon has one piece of fruit in his lunch each day. He has a banana, an apple, or an orange. The probability that he has a banana is $\frac{1}{4}$, and the probability that he has an apple is $\frac{1}{3}$. What is the probability that he has an orange?

A. $\frac{1}{12}$

B. $\frac{1}{7}$

C. $\frac{5}{12}$

D. $\frac{7}{12}$

ITEM 346

Molly spins this spinner one time.

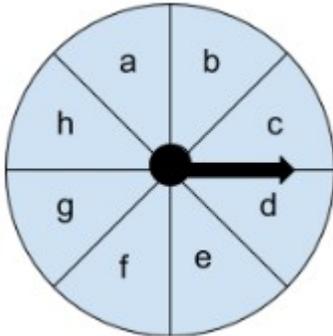


What is the probability that the spinner will land on a star?

- A. 4%
- B. 10%
- C. 30%
- D. 40%**

ITEM 347

The spinner shown is divided into 8 equal portions.



The arrow on the spinner is spun once. What is the probability that the arrow will land on a section labeled with a, b, or c?

A. $\frac{1}{4}$

B. $\frac{3}{8}$

C. $\frac{1}{2}$

D. $\frac{5}{8}$

ITEM 348

There are 20 students in Mr. Ling's mathematics class. Each student is equally likely to be chosen to solve the Problem of the Day. Shania is in this class. What is the probability she will be chosen?

A. 0.05

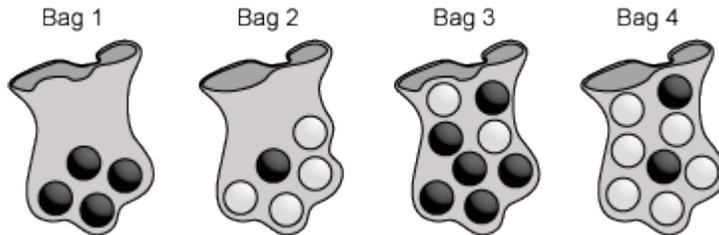
B. 0.20

C. 0.25

D. 0.50

ITEM 349

Terek will select one marble from one of these bags without looking.



Terek wants the probability of selecting a black marble to be 0.25. From which bag should Terek select the marble?

- A. Bag 1
- B. Bag 2
- C. Bag 3
- D. Bag 4**

ITEM 350

Tanisha hit 40 golf shots and measured the distance of each shot. Her results are shown below.



What is the experimental probability that Tanisha hits a shot that is in the 180–189 yard range?

A. $\frac{11}{40}$

B. $\frac{11}{29}$

C. $\frac{29}{40}$

D. $\frac{9}{11}$

ITEM 351

Students in a class will be randomly assigned to a polygon for a class project. The only types of polygons being assigned are pentagons, hexagons, octagons, and nonagons. If there is an equal number of each type of polygon, what is the probability that the first polygon assigned will be an octagon?

Enter your answer in decimal form below.

.25
.25
.250

ITEM 352

Students in Ms. Q's math class are making holiday ornaments out of cardstock that will be folded into different platonic solids. Students are randomly assigned a platonic solid: tetrahedron, cube, octahedron, dodecahedron, icosahedron. If there is an equal number of each type, what is the probability the first platonic solid assigned will be an octahedron?

Enter your answer in decimal form below.

.2
.20

Statistics and Probability

7.SP.C.08

Items 353- 382

ITEM 353

Use the table to answer the question.

		Rolled Number on Cube 2					
		1	2	3	4	5	6
Rolled Number on Cube 1	1						X
	2						X
	3						X
	4						X
	5						X
	6	X	X	X	X	X	

Edward is playing a game with two number cubes with sides labeled from 1 to 6. He creates this table to record the possible results of rolling both cubes.

Which event is represented by the cells that Edward has marked with an X?

- A. rolling sixes on both number cubes
- B. rolling a six on one cube but not both**
- C. rolling two numbers whose sum is six
- D. rolling a six on at least one number cube

ITEM 354

Alex develops a set of pictures. He chooses at random from the options shown in the table below.

Size	Finish
4 in. x 6 in.	Flat
5 in. x 7 in.	Glossy
8 in. x 10 in.	

What is the probability that he develops a set of 4 in. x 6 in. glossy pictures?

A. $\frac{1}{6}$

B. $\frac{1}{5}$

C. $\frac{1}{3}$

D. $\frac{1}{2}$

ITEM 355

Jim flips a coin three times.

What is the probability that the coin lands on the same side all three times?

A. $\frac{1}{8}$

B. $\frac{1}{4}$

C. $\frac{1}{3}$

D. $\frac{1}{2}$

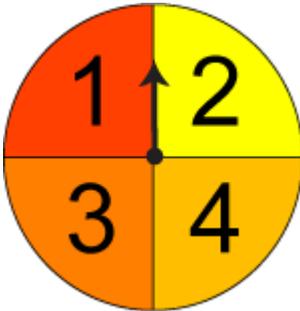
ITEM 356

Which situation has a probability of $\frac{1}{64}$ when flipping a fair coin?

- A. landing on heads 3 times in a row
- B. landing on heads 4 times in a row
- C. landing on heads 5 times in a row
- D. landing on heads 6 times in a row**

ITEM 357

Karl notices that his bus is on schedule 75% of the time. He uses the spinner below to estimate the probability the bus will be on schedule the next 5 days in a row.



The numbers 1, 2, and 3 represent days the bus is on schedule.

	Monday	Tuesday	Wednesday	Thursday	Friday
Trial 1	1	3	3	4	4
Trial 2	3	2	2	1	1
Trial 3	2	4	3	3	1
Trial 4	2	3	1	3	4
Trial 5	2	4	1	4	2

Based on these results, what is the probability the bus will be on schedule 5 days in a row?

- A. 0
- B. 0.2**
- C. 0.4
- D. 0.8

ITEM 358

About half of the students in Rosemary's school ride the bus. Rosemary flips a coin repeatedly to help predict the probability of a student riding the bus. She uses H to represent a student that rides the bus and T to represent a student that does not.

THH	HTH	HHH	HHH
TTT	TTH	HHT	TTH
HHT	THT	TTT	TTH
HTH	HHH	TTH	THT
HHT	HTT	HTT	TTT
THT	HHT	TTT	TTH

According to the simulation, what is the probability that at least 2 of the next 3 students Rosemary sees ride the bus?

- A. $\frac{8}{24}$
- B. $\frac{11}{24}$**
- C. $\frac{13}{24}$
- D. $\frac{16}{24}$

ITEM 359

The weather forecast shows a 30% chance of rain on Saturday and a 60% chance of rain on Sunday. Liam estimates the probability of it raining both days by using a calculator to randomly generate a set of numbers.

11 69 98 63 31
08 99 19 39 11
24 85 37 59 60
07 01 88 76 63
32 44 67 54 51

A first digit of 1 - 3 represents rain on Saturday. A second digit of 1 - 6 represents rain on Sunday.

Based on these results, what is the probability that it will rain on both days?

- A. 18%
- B. 20%**
- C. 30%
- D. 32%

ITEM 360

Juanita will adopt two fish. To help predict the gender of each fish, she conducts a simulation by flipping two coins repeatedly.

HT	HT	TH	HT	HH
TH	TT	TH	HH	HH
HH	HH	TT	TT	TH
HT	TH	TH	HT	HH

Juanita decides that heads (H) represents a male fish and tails (T) represents a female fish. Based on the results of her simulation, what is the probability that Juanita will adopt one male and one female fish?

A. $\frac{5}{20}$

B. $\frac{6}{20}$

C. $\frac{9}{20}$

D. $\frac{11}{20}$

ITEM 361

Fred wants to go sailing each day for the next three days. There is a 50% chance each day that it will be too windy to go sailing. Fred uses a coin to simulate whether it will be too windy each day. This list shows the results from Fred's first 20 simulations. (H = too windy; T = not windy)

HTH THT TTH HTH HTT
HHT THH TTT HTH THT
HHH TTT THH HTH TTH
THH THT HHT HTT HTH

Based on this data, what is the probability that it will not be windy on all three days?

A. $\frac{2}{20}$

B. $\frac{3}{20}$

C. $\frac{10}{20}$

D. $\frac{12}{20}$

ITEM 362

Mitch and Brent each apply for summer jobs. The probability they each will be hired is 50%. By flipping a pair of coins 10 times, Mitch and Brent simulate the possible outcomes as follows.

- If the first coin lands on heads (H), Mitch is hired.
- If the second coin lands on tails (T), Brent is hired.

Here are the results of their simulation:

HT	TH	HH	TT	TH
HH	TH	TT	HT	TH

Based on the simulation, what is the probability that both Mitch and Brent are hired?

- A. 20%**
- B. 30%
- C. 40%
- D. 50%

ITEM 363

Lacey has these coins in her pockets.

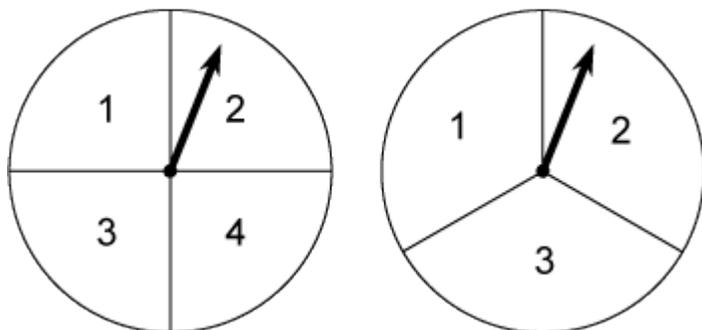
Left Pocket	Right Pocket
2 quarters	5 pennies
4 nickels	3 dimes
2 pennies	1 quarter

She randomly picks one coin out of each pocket. Which combination is not possible?

- A. penny and dime
- B. nickel and nickel**
- C. quarter and dime
- D. quarter and quarter

ITEM 364

Abby spins these two spinners.



What is the probability that both spinners land on 3?

A. $\frac{1}{12}$

B. $\frac{1}{9}$

C. $\frac{2}{7}$

D. $\frac{1}{3}$

ITEM 365

Benjamin tossed a coin and rolled a six-sided number cube. What is the probability that he flipped heads and rolled a multiple of 2?

A. $\frac{1}{2}$

B. $\frac{1}{6}$

C. $\frac{1}{4}$

D. $\frac{1}{12}$

ITEM 366

Holly flips a nickel and a quarter. What is the probability that both coins land on heads?

A. $\frac{1}{2}$

B. $\frac{1}{4}$

C. 1

D. 2

ITEM 367

Chandra creates a 5-section spinner. Chandra spins the spinner 50 times. This table shows the experimental probabilities for each outcome.

Outcome	Probability
Red	0.22
Blue	0.52
Green	0.04
Yellow	0.10
Black	0.12

Chandra spins her spinner two more times. Based on the data in the table, what is the approximate probability that she will land on blue both times?

- A. 0.04
- B. 0.25**
- C. 0.50
- D. 1.00

ITEM 368

This table shows the types of neon tetra fish in a tank at the pet store.

Type of Fish	Number of Fish in Tank
Neon Tetra	15
Gold Neon Tetra	10
Diamond Head Neon Tetra	25

An employee randomly catches one fish and puts it in another tank. Then she catches another fish. What is the probability that she catches 2 gold neon tetras?

A. $\frac{9}{250}$

B. $\frac{9}{245}$

C. $\frac{1}{25}$

D. $\frac{1}{5}$

ITEM 369

This table shows the state quarters Jordan has in her desk drawer.

State Quarters

State	Number of Quarters
Kansas	4
Louisiana	3
Vermont	2

Jordan takes one quarter from the drawer without looking and then places it in the drawer again. She then takes another quarter from the drawer. What is the probability that the first coin is a Vermont quarter and the second coin is a Louisiana quarter?

A. $\frac{2}{81}$

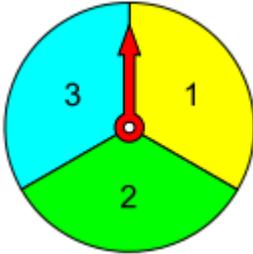
B. $\frac{2}{27}$

C. $\frac{1}{12}$

D. $\frac{2}{9}$

ITEM 370

Ariana is playing a game. For each of her turns, she rolls a number cube labeled with the numbers 1 through 6. She also spins the spinner shown below.



To win the game Ariana needs to roll a 3 and spin a 3 on her next turn. What is the probability that Ariana will win the game on her next turn?

A. $\frac{1}{18}$

B. $\frac{1}{9}$

C. $\frac{1}{6}$

D. $\frac{1}{3}$

ITEM 371

Evan is making a salad using only one type of lettuce and one topping.

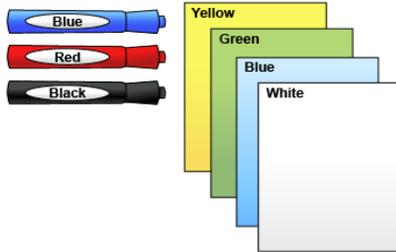
- Type of lettuce: iceberg or romaine
- Topping: tomatoes, cucumbers, olives, or carrots

How many different salads can Evan make using only one type of lettuce and one topping?

- A. 4
- B. 6
- C. 8**
- D. 16

ITEM 372

Maria has these markers and pieces of paper to make a card.



She uses 1 color marker and 1 piece of paper to make the card. Which table shows all the possible color combinations for Maria's card?

A.

Marker	Paper
Blue	Yellow
Red	Green
Black	Blue

B.

Marker	Paper
Blue	Yellow
Blue	White
Red	Yellow
Red	Green
Red	Blue
Red	White
Black	Yellow
Black	Green
Black	Blue
Black	White

C.

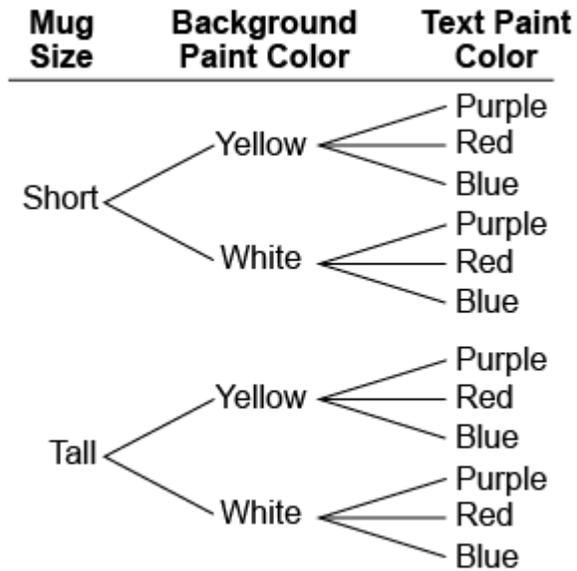
Marker	Paper
Blue	Yellow
Blue	Green
Blue	Blue
Blue	White
Red	Yellow
Red	Green
Red	Blue
Red	White
Black	Yellow
Black	Green
Black	Blue
Black	White

D.

Marker	Paper
Blue	Yellow
Blue	Green
Blue	Blue
Blue	White
Red	Yellow
Red	Green
Red	Blue
Red	White
Red	Red
Black	Yellow
Black	Green
Black	Blue
Black	White
Black	Black

ITEM 373

This diagram shows the options Cara has for decorating a coffee mug at a pottery store.



How many different ways can Cara decorate the mug?

- A. 3
- B. 5
- C. 12**
- D. 18

ITEM 374

This table shows the after-school programs available at Damian's school.

Monday	Tuesday
Music (M)	Painting (P)
Swimming (S)	Football (F)
Choir (C)	Basketball (B)

Which list gives all the possible combinations of programs for the two days?

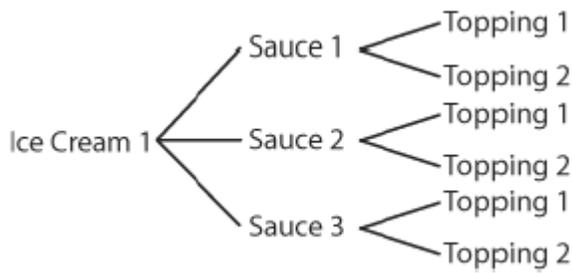
- A. M/P, M/F, M/B
- B. M/S, M/C, S/C, P/F, P/B, F/B
- C. M/P, M/F, M/B, S/P, S/F, S/B, C/P, C/F, C/B**
- D. M/S, M/C, M/P, M/F, M/B, S/C, S/P, S/F, S/B, C/P, C/F, C/B, P/F, P/B, F/B

ITEM 375

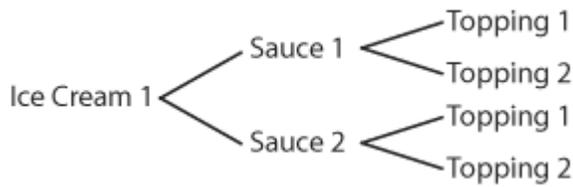
Philippe goes to an ice cream sundae bar that offers one ice cream flavor, two sauces, and three toppings. Which tree diagram correctly shows all possible ice cream sundaes that Philippe can make?



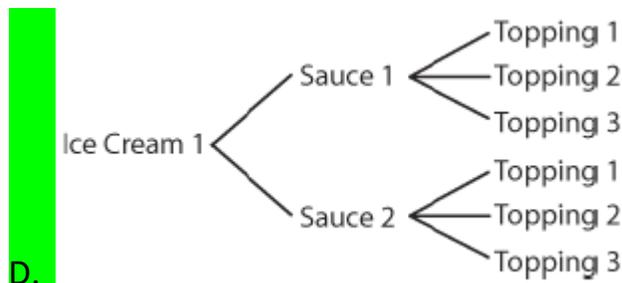
A.



B.



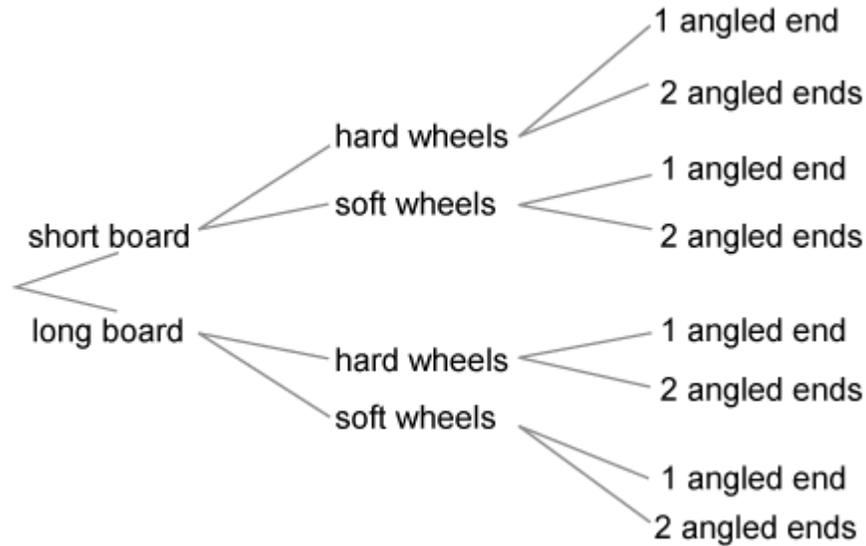
C.



D.

ITEM 376

Damien is building a custom skateboard. This tree diagram shows the options available for a custom skateboard. The store where Damien shops does not have soft wheels. Using the options available at the store, how many different customizations can Damien build?



A. 3

B. 4

C. 7

D. 8

ITEM 377

These tables show the candidates for student body president and vice president.

President
Chang (C)
Herrera (H)
Smith (S)

Vice President
Brown (B)
Goldsmith (G)

Which list shows all possible combinations of who could be elected president and vice president?

- A. C/B, H/G, S/B
- B. C/B, H/B, S/B, C/G, H/G, S/G**
- C. C/H, C/S, C/B, C/G, H/S, H/B, H/G, S/B, S/G, B/G
- D. C/B, H/B, S/B, C/G, H/G, S/G, B/C, B/H, B/S, G/C, G/H, G/S

ITEM 378

Tamisha wants to buy two roses. She can choose white (W), pink (P), red (R), or yellow (Y) roses. Which table shows all the possible color combinations of two roses Tamisha can buy?

A.

W-P	P-R	R-Y	Y-Y
W-R	P-Y		
W-Y			

B.

W-W	P-P	R-R	Y-Y
W-P	P-R	R-Y	
W-R	P-Y		
W-Y			

C.

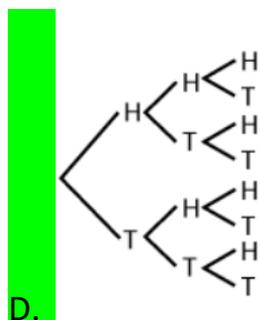
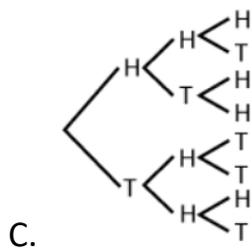
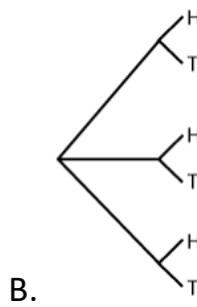
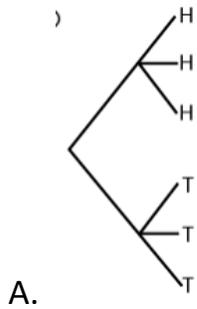
W-P	R-W	P-W	Y-W
W-R	R-P	P-R	Y-R
W-Y	R-Y	P-Y	Y-P

D.

W-W	R-W	P-W	Y-W
W-R	R-R	P-R	Y-R
W-P	R-P	P-P	Y-P
W-Y	R-Y	P-Y	Y-Y

ITEM 379

Brent flips 3 coins. Which tree diagram correctly shows all the possible combinations of heads and tails?



ITEM 380

Jasmine is rolling two six-sided number cubes and adding the two numbers from the sides that land facing up. Which table could be used to represent all the possible outcomes?

A.

		Number Cube #2					
		1	2	3	4	5	6
Number Cube #1	6	6	12	18	24	30	36

B.

		Number Cube #2					
		1	2	3	4	5	6
Number Cube #1	6	7	8	9	10	11	12

C.

		Number Cube #2					
		1	2	3	4	5	6
Number Cube #1	1	1	2	3	4	5	6
	2	2	4	6	8	10	12
	3	3	6	9	12	15	18
	4	4	8	12	16	20	24
	5	5	10	15	20	25	30
	6	6	12	18	24	30	36

D.

		Number Cube #2					
		1	2	3	4	5	6
Number Cube #1	1	2	3	4	5	6	7
	2	3	4	5	6	7	8
	3	4	5	6	7	8	9
	4	5	6	7	8	9	10
	5	6	7	8	9	10	11
	6	7	8	9	10	11	12

A school cafeteria serves several different lunch options each day. On Monday, a student can choose from hamburgers, chicken, or pizza. They have a choice of vegetable or fresh fruit and a choice of chocolate or 2% milk. How many different lunch combinations can a student choose?

A. 3

B. 7

C. 8

D. 12

ITEM 382

Cade is playing a game that uses a standard die. If he rolls a 6 two times in a row then he wins the game. What is his probability of rolling a 6 two times in a row?

A. $\frac{1}{36}$

B. $\frac{1}{12}$

C. $\frac{1}{6}$

D. $\frac{1}{3}$

