

Algebra 2 Standards

Number and Quantity

[A2: N-RN.A.2](#)

[A2: N-CN.A.2](#)

Algebra

[A2: A-SSE.A.2](#)

[A2: A-SSE.B.3](#)

[A2: A-SSE.B.4](#)

[A2: A-APR.B.2](#)

[A2: A-APR.B.3](#)

[A2: A-APR.D.6](#)

[A2: A-CED.A.1](#)

[A2: A-REI.A.2](#)

[A2: A-REI.B.4b](#)

[A2: A-REI.C.6](#)

[A2: A-REI.C.7](#)

[A2: A-REI.D.11](#)

Functions

[A2: F-IF.B.4](#)

[A2: F-IF.C.7](#)

[A2: F-IF.C.7c](#)

[A2: F-IF.C.7e](#)

[A2: F-IF.C.8b](#)

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Statistics and Probability

[A2: S-IC.A.1](#)

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[A2: S-IC.B.6](#)

Number and Quantity
A2: N-RN.A.2
Items 1 – 6

ITEM 1

Simplify.

$$(x^a)^{\frac{2}{a}}$$

A. x^2

B. x^a

C. x^{2a}

D. $x^{\left(a + \frac{2}{a}\right)}$

ITEM 2

Simplify this expression.

$$[q^{-5} (q^6)]^2$$

A. 1

B. q

C. q^2

D. q^7

ITEM 3

Simplify the expression.

$$4\left(x^{\frac{2}{5}} + 2x^{\frac{1}{5}}\right) + \left(x^{\frac{1}{5}}\right)^2$$

- A. $5x^{\frac{2}{5}} - 8x^{\frac{1}{5}}$
- B. $4x^{\frac{2}{5}} + 9x^{\frac{1}{5}}$
- C. $5x^{\frac{2}{5}} + 2x^{\frac{1}{5}}$
- D. $4x^{\frac{2}{5}} + 3x^{\frac{1}{5}}$

ITEM 4

Simplify

$$x^{\frac{2}{3}} + (x^2)^{\frac{1}{3}} + (x^{\frac{1}{3}})^2 + (x^{\frac{1}{3}})(x^2)$$

A. $4x^{\frac{2}{3}}$

B. $x^2 + x^{\frac{7}{3}}$

C. $3x^{\frac{2}{3}} + x^{\frac{7}{3}}$

D. $2x^{\frac{2}{3}} + 2x^{\frac{7}{3}}$

ITEM 5

Simplify.

$$(3x + 2)^{(2/3)}(3x + 2)^{(1/3)}$$

A. $3x + 2$

B. $(3x + 2)^{(1/2)}$

C. $(3x + 2)^{(2/9)}$

D. $(3x + 2)^{(1/3)}$

ITEM 6

Select the expression that is equivalent to:

$$\sqrt[3]{729}$$

A. $3 \times 3 \times 3 \times 3 \times 3 \times 3$

B. 9^3

C. $729^{(1/3)}$

D. 729^3

Number and Quantity
A2: N-CN.A.2
Items 7 – 13

ITEM 7

Find the product.

$$4i(-5 + 3i)(2 - 7i).$$

- A. $-496 + 461i$
- B. $164 + 44i$
- C. $124 + 164i$
- D. $-164 + 44i$

ITEM 8

Find the product in simplest form.

$$3i(2+i)$$

A. $-3 + 6i$

B. $3 + 6i$

C. $9i$

D. -6

ITEM 9

Find the product in simplest form.

$$(5 - 4i)(7 - 6i)$$

A. 11

B. $59 - 58i$

C. $11 - 58i$

D. $35 - 58i + 24i^2$

ITEM 10

Find the sum.

$$(2 + i) + (5 - 3i)$$

A. $7 - 4i$

B. $7 + 4i$

C. $3 - 2i$

D. $7 - 2i$

ITEM 11

Find the product in simplest form.

$$(8 + 2i)(1 - 6i)$$

A. $-4 - 46i$

B. $20 - 46i$

C. $8 - 12i$

D. $8 - 46i - 12i^2$

ITEM 12

Find the difference.

$$(3 + 4i) - (2 - 3i)$$

A. $1 + 7i$

B. $5 + 7i$

C. $1 + i$

D. $5 + i$

ITEM 13

Which of the following expressions can be represented by real numbers?

- I. $-3(29)$
- II. $49 - 9i^2$
- III. $i(13i)$
- IV. $(i)(i)$
- V. $i(7 + i)$
- VI. $(11 - i)(11 + i)$

- A. I
- B. I, II, VI
- C. I and V
- D. I, II, III, IV, and VI**

Algebra
A2: A-SSE.A.2
Items 14 – 19

ITEM 14

Which expression represents the factored form of $x^3 - 27$?

- A. $(x + 3)(x^2 - 3x + 9)$
- B. $(x - 3)(x^2 - 3x + 9)$
- C. $(x + 3)(x^2 + 3x + 9)$
- D. $(x - 3)(x^2 + 3x + 9)$

ITEM 15

Which expression is equivalent to

$$b(x - 1) + a(-x + 1)?$$

A. $(b - a)x$

B. $(b - a)(x - 1)$

C. $(b + a)x - b + a$

D. $(b - a)x + b + a$

Algebra
A2: A-SSE.B.3

ITEM 16

Which of the following are equivalent forms of $y = 3.1045(5.3401)^x$?

- I. $y = 5.3401 e^{1.1329 x}$
- II. $y = 3.1045 e^{1.6752 x}$
- III. $y = 3.1045(5.3399)^x$
- IV. $y = 5.3401 e^{(\ln 3.1045) x}$
- V. $y = 5.3401(3.1046)^x$
- VI. $y = 3.1045 e^{(\ln 5.3401) x}$

A. II only

B. II, III, and VI

C. IV only

D. I and V

Algebra
A2: A-SSE.B.4

ITEM 17

The first four terms of a geometric series are 128, 64, 32, 16,

What is the sum of the first 10 terms of the series?

A. $15\frac{63}{64}$

B. $255\frac{3}{4}$

C. $256\frac{1}{4}$

D. $641\frac{1}{4}$

Algebra
A2: A-APR.B.2

ITEM 18

Brian divides the polynomial $p(x)$ by $(x - 5)$. He gets a result of $r(x)$ with a remainder of 14.

Which statement **must** be true?

A. $p(-5) = 14$

B. $p(5) = 14$

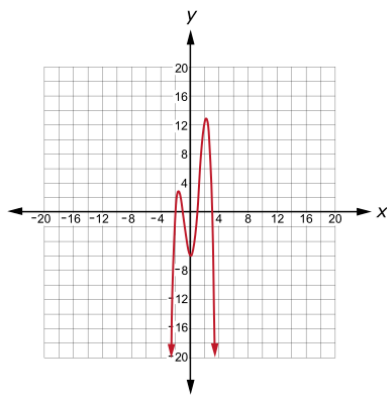
C. $r(-5) = 14$

D. $r(5) = 14$

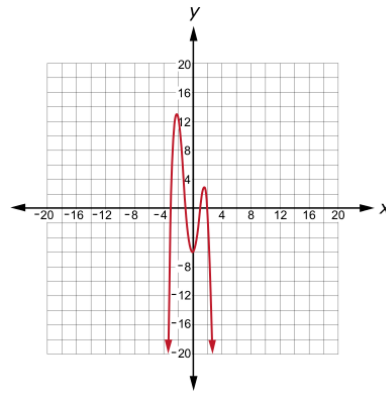
Algebra
A2: A-APR.B.3

ITEM 19

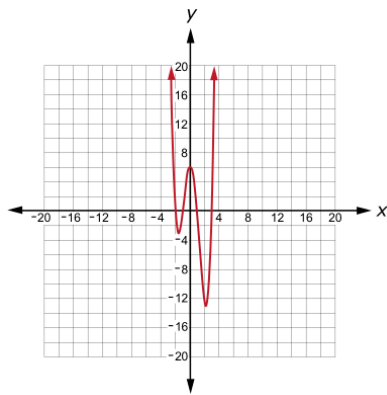
Which graph shows the function $y = (x - 2)(x - 1)(x + 1)(x + 3)$?



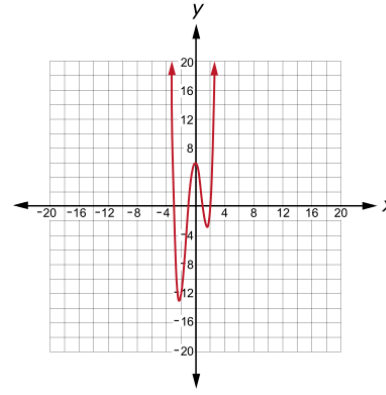
A.



C.



B.



D.

Algebra
A2: A-APR.D.6
Items 20 – 22

ITEM 20

Which of the following is equivalent to the expression?

$$\frac{(3x^3 + 2)^2 - 4}{x}; x \neq 0$$

- A. $9x^5 + 6x^2$
- B. $9x^4 + 12x$
- C. $6x^5 + 12x^2$
- D. $9x^5 + 12x^2$

ITEM 21

Which expression is equivalent to $\frac{4x^4 - 7x^2 - 2}{2x^3}$?

A. $2x - \frac{7x^2 - 2}{2x^3}$

B. $2x - \frac{7x^2 + 2}{2x^3}$

C. $\frac{4x^2 - 7}{2x} - x^3$

D. $\frac{4x^2 + 1}{2x^3} + \frac{x^2 - 2}{2x^3}$

Algebra
A2: CED.A.1

ITEM 22

Emily and Jasper are working at a car wash. It takes Emily 20 minutes to wash a car by herself. Working together, Emily and Jasper wash a car in 12 minutes. Which equation can be used to find j , the number of minutes Jasper takes to wash a car by himself?

A. $12j = 20$

B. $12 + j = 20$

C. $\frac{1}{20} + \frac{1}{j} = \frac{1}{12}$

D. $\frac{1}{j} = \frac{1}{20} + \frac{1}{12}$

Algebra
A2: A-REI.A.2
Items 23 – 31

ITEM 23

Solve the following radical equation: $\sqrt{8n + 1} - \sqrt{6 - 2n} = 1$

A. $-1, -\frac{3}{25}$

B. $\frac{3}{25}$

C. $1, \frac{3}{25}$

D. 1

ITEM 24

Use the student work to answer the question.

$$\begin{array}{l} \text{Step 1: } \sqrt{3x} + 4 = 1 \\ \text{Step 2: } \sqrt{3x} = -3 \\ \text{Step 3: } (\sqrt{3x})^2 = (-3)^2 \\ \text{Step 4: } 3x = 9 \\ \text{Step 5: } x = 3 \end{array}$$

Stephen solved the equation $\sqrt{3x} + 4 = 1$. His work is shown.

Which statement accurately describes Stephen's work?

- A. Stephen's work is correct. The solution is $x = 3$.
- B. Stephen's work is correct. However, $x = 3$ is an extraneous solution.**
- C. Stephen's solution is incorrect. In steps 3 to 4, $(-3)^2$ should equal -9 .
- D. Stephen's solution is incorrect. In steps 1 to 2, both sides of the equation should be squared before subtracting 4.

ITEM 25

What extraneous solution arises when the equation $\sqrt{x-1} = x-7$ is solved for x by first squaring both sides of the equation?

- A. 1
- B. 5**
- C. 7
- D. 10

ITEM 26

What solution or solutions satisfy this equation?

$$\frac{1}{x+1} + \frac{1}{x-1} = \frac{2}{x^2-1}$$

- A. 2
- B. 1
- C. -1 or 1
- D. no solution

ITEM 27

What solution or solutions satisfy this equation?

$$\sqrt{5x - 9} = x - 1$$

- A. $x = 2$
- B. $x = 2$ or 5
- C. $x = 5$ or 9
- D. There is no solution.

ITEM 28

What solution or solutions satisfy this equation?

$$\sqrt{30 - 2x} = x - 3$$

- A. $x = -3$
- B. $x = 7$
- C. $x = -3$ or 7
- D. $x = -7$ or 3

ITEM 29

What extraneous solution arises when the equation $\sqrt{2x-1} + 5 = 2$ is solved for x?

A. -3

B. 5

C. 9

D. 10

ITEM 30

Solve this equation.

$$\sqrt{x - 1} = 2$$

- A. 1
- B. 3
- C. 4
- D. 5**

Algebra
A2: A-REI.B.4b

ITEM 31

Solve for x .

$$13x^2 + 6x + 7 = 0$$

A. $x = \frac{-3 \pm i\sqrt{82}}{13}$

B. $x = 3x^{\frac{2}{3}} + x^{\frac{7}{3}}$

C. $x = \frac{-3 \pm 2i\sqrt{82}}{13}$

D. $x = 2x^{\frac{2}{3}} + 2x^{\frac{7}{3}}$

Algebra
A2: A-REI.C.6
Items 32 – 35

ITEM 32

Solve the system of linear equations:

$$\begin{aligned}x + 2y + 3z &= 5 \\2x + 3y + 2z &= 2 \\-x - 2y - 4z &= -1\end{aligned}$$

A. $(-31, 24, -4)$

B. $(-4, 24, -31)$

C. $(41, -24, 4)$

D. $(31, -7, -4)$

ITEM 33

What is the solution to the following system of equations?

$$\begin{aligned}x + y - z &= -4 \\2x - y + 3z &= 20 \\-3x - 2y + z &= 1\end{aligned}$$

A. (5, -6, 3)

B. (2, -1, 5)

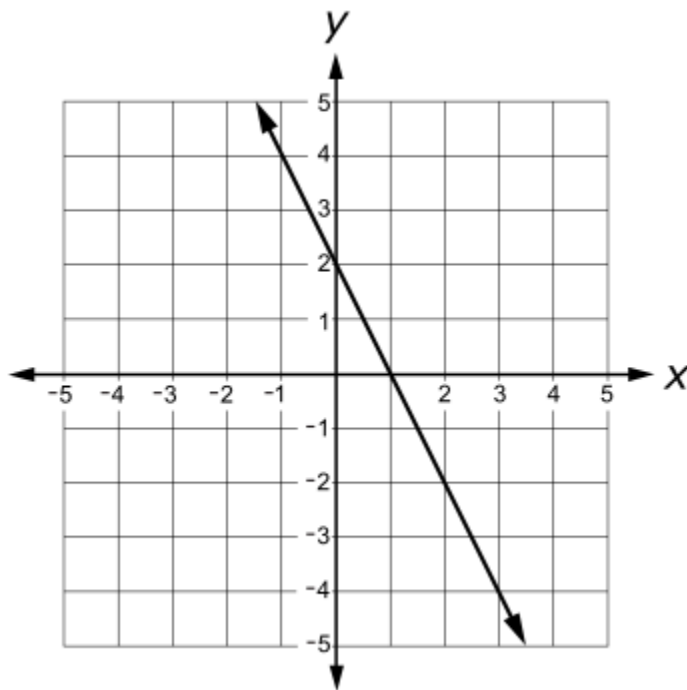
C. $(-\frac{2}{7}, 4\frac{1}{7}, 8\frac{3}{7})$

D. (-4, 11, 11)

Algebra
A2: A-REI.C.7

ITEM 34

Use the graph to answer the question.



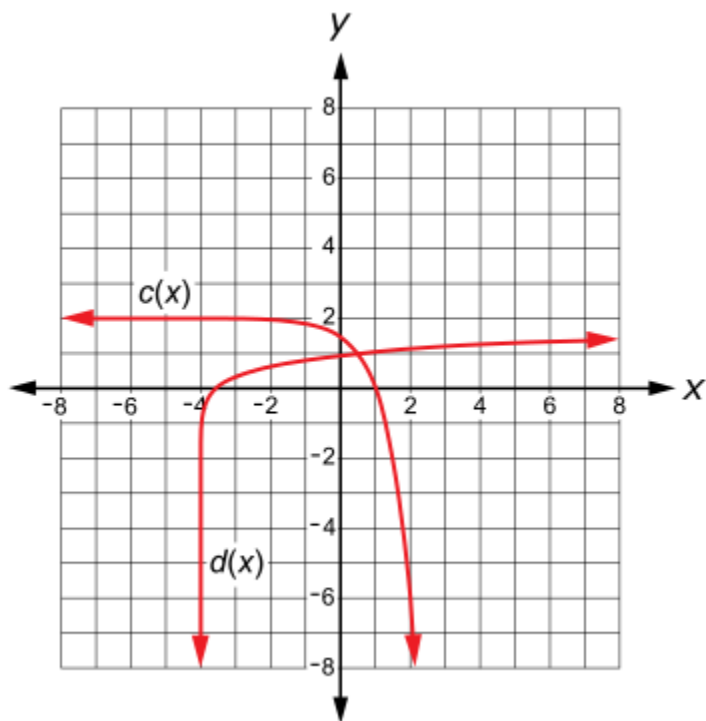
At which point or points does the line shown on the graph intersect the graph of the equation $y = x^2 - 2x$?

- A. $(\sqrt{2}, -\sqrt{2})$
- B. $(\sqrt{2}, -2\sqrt{2} + 2)$
- C. $(0, 0)$ and $(2, 0)$
- D. $(\sqrt{2}, -2\sqrt{2} + 2)$ and $(-\sqrt{2}, 2\sqrt{2} + 2)$

Algebra
A2: A-REI.D.11

ITEM 35

Use the graphs of $c(x)$ and $d(x)$ to answer the question.



Which value(s) represent the approximate solution(s) to $c(x) = d(x)$?

- A. 0.5
- B. 1.0
- C. -3.5, 1.0
- D. 0.95, 1.5

Functions
A2: F-IF.B.4
Items 36 – 37

ITEM 36

Which function decreases for any increase in the real values of x ?

A. $f(x) = -\frac{3}{x}$

B. $f(x) = -0.5x^4$

C. $f(x) = -x^3 + 5$

D. $f(x) = -4^{(-x)} + 5$

ITEM 37

The graph of an equation has the following properties:

- crosses the x-axis exactly 2 times
- has a range to $+\infty$ but not to $-\infty$
- has 3 local minima or maxima
- increases and decreases in different intervals of the domain

Which equation could be represented by this graph?

A. $y = x^2 - 2x - 3$

B. $y = x^3 + 2x^2 - x - 2$

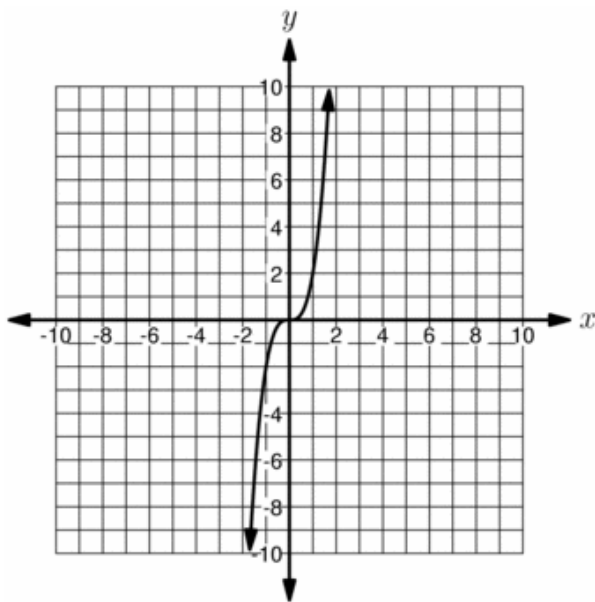
C. $y = x^4 - 3x^2 - 4$

D. $y = x^5 + x^4 - x - 1$

Functions
A2: F-IF.C.7
Items 38 – 39

ITEM 38

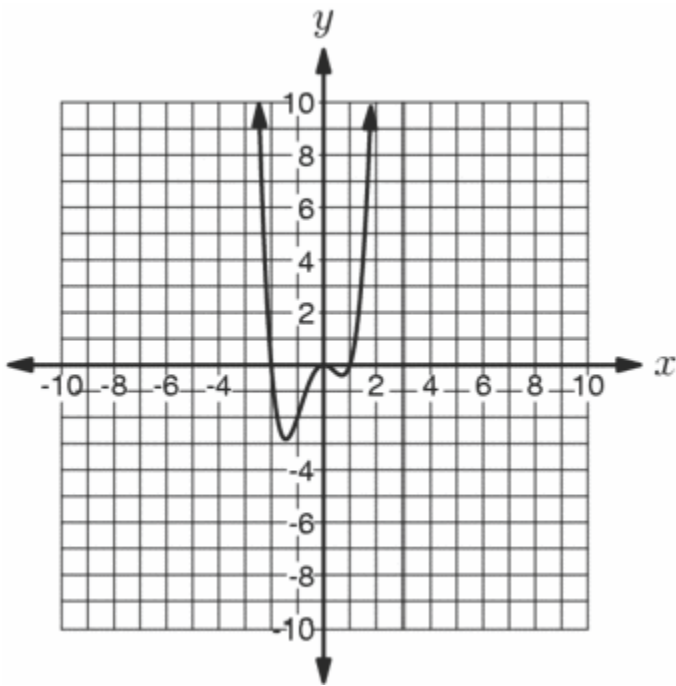
What is the equation of this graph?



- A. $y = \log_2 x$
- B. $y = 2x^2$
- C. $y = 2x^3$
- D. $y = 2^x$

ITEM 39

What type of graph is shown on this grid?



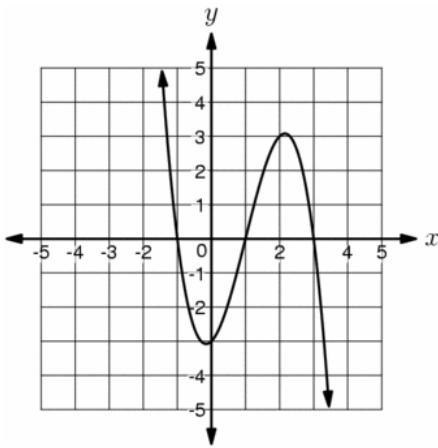
- A. linear
- B. polynomial**
- C. exponential
- D. logarithmic

Functions
A2: F-IF.C.7c
Items 40 – 41

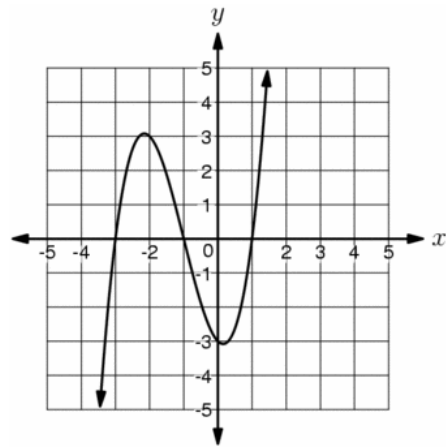
ITEM 40

Which graph correctly represents this equation?

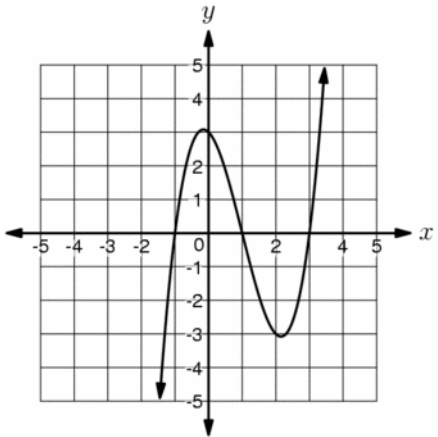
$$y = x^3 - 3x^2 - x + 3$$



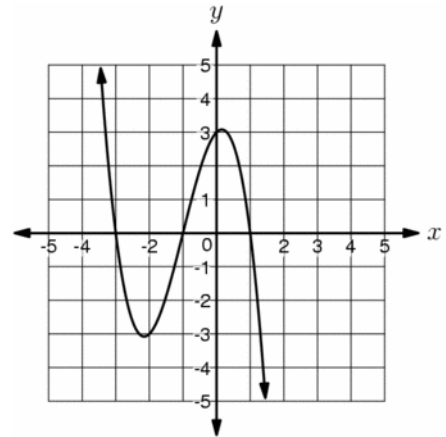
A.



C.



B.



D.

ITEM 41

Carla drew the graph of a cubic function. How many real zeros could Carla's function have?

- A. 0 or 1 only
- B. 1 or 3 only
- C. 1, 2, or 3 only
- D. 0, 2, or 4 only

Functions
A2: F-IF.C.7e
Items 42 – 46

ITEM 42

Which line is an asymptote of this function?

$$y = e^x$$

A. $x = 0$

B. $x = e$

C. $y = 0$

D. $y = x$

ITEM 43

The function $y = \log_{10} x$ has a vertical asymptote at $x = 0$. Which of these functions has a different vertical asymptote?

A. $y = \log_{10} (x + 2)$

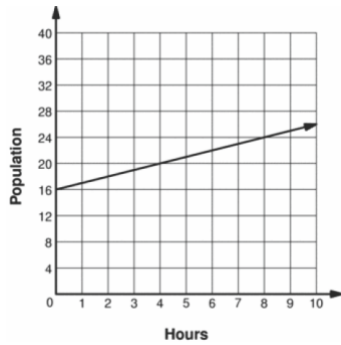
B. $y = \log_{10} x + 3$

C. $y = 4 \log_{10} x$

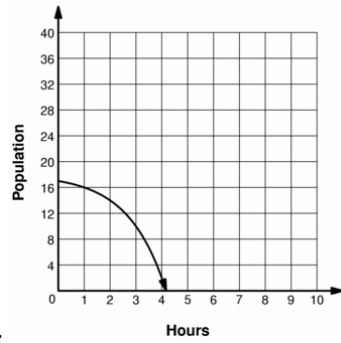
D. $y = \log_{10} (5x)$

ITEM 44

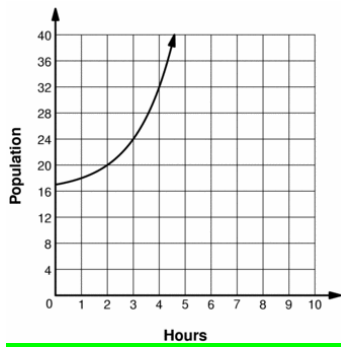
The population growth of bacteria over a certain number of hours is represented by $n = 2^t + 16$, where t is the number of hours. Which graph represents the population growth of bacteria?



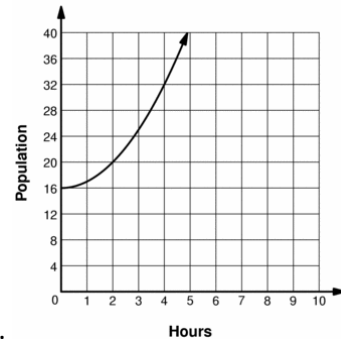
A.



C.



B.



D.

Functions
A2: F-IF.C.8b

ITEM 45

A farmer buys an apple orchard. The weight (w) in pounds of the apples harvested per year as a function of the number of years (y) the farmer has owned the orchard can be modeled by this equation:

$$w = 15,850(0.94)^y$$

What does the equation mean?

- A. Each year, the weight of apples goes up 94%.
- B. Each year, the weight of apples goes up by 0.94 pounds.
- C. Each year, the weight of apples goes down by 0.94 pounds.
- D. Each year, the weight of apples is 94% of what it was the year before.**

Functions
A2: F-IF.BF.A.1b

ITEM 46

A farmer plants an apple orchard. For the first ten years after planting, the number of pounds of apples produced by one tree can be predicted by using the function $a(y) = \frac{y^2}{6.5}$, where y is the number of years since the tree was planted.

For the same ten years, the selling price of one pound of apples can be predicted by using the function $p(y) = 0.04y + 0.98$.

Which function can be used to predict the farmer's income from one apple tree as a function of the number of years since the tree was planted?

A. $i(y) = \frac{y^2}{6.5} - (0.04y + 0.98)$

B. $i(y) = \frac{y^2}{6.5} \div (0.04y + 0.98)$

C. $i(y) = \frac{y^2}{6.5} + (0.04y + 0.98)$

D. $i(y) = \frac{y^2}{6.5} \times (0.04y + 0.98)$

Functions
A2: F-BF.A.2
Items 47 – 49

ITEM 47

Let x_n be the n^{th} term of this pattern and x_{n-1} be the term before the n^{th} term. Which rule could be used to find the n^{th} term in this pattern, when $x_1 = 2$ and $x_2 = 3$?

2, 3, 5, 8, 13 . . . x_{n-1} , x_n

- A. $x_n = x_{n-1} + 1$
- B. $x_n = x_{n-1} + n$
- C. $x_n = x_{n-1} + x_{n-2}$**
- D. $x_n = x_{n-1} + x_{n+1}$

ITEM 48

Let a_n be the n^{th} term of the pattern. Which equation can be used to find the value of the n^{th} term in this pattern?

1.5, 3, 4.5, 6, 7.5, 9, 10.5, . . . a_n

A. $a_n = 1.5n$

B. $a_n = 0.5 + n$

C. $a_n = 1.5 + n$

D. $a_n = 1 + 0.5n$

ITEM 49

Demarcus has a public transportation card worth \$25.00. After using the card to ride the bus Monday, he has \$23.75 left on the card. After riding the bus again on Tuesday, he has \$22.50 left on the card.

Write an explicit formula to represent the amount of money left on the card as an arithmetic sequence. What is the amount of money left on the card after 11 days?

A. $A(n) = 23.75 - 1.25(n - 1)$; \$11.25

B. $A(n) = 23.75 - 1.25(n + 1)$; \$8.75

C. $A(n) = 25.00 - 1.25(n - 1)$; \$12.50

D. $A(n) = 25.00 - 1.25(n + 1)$; \$10.00

Functions
A2: F-BF.B.3
Items 50– 55

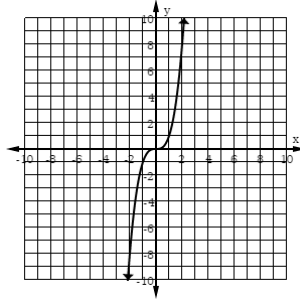
ITEM 50

Determine the transformations of the parent function $f(x) = \sin x$ that result in the function $f(x) = -2 \sin(x + 2) - 3$.

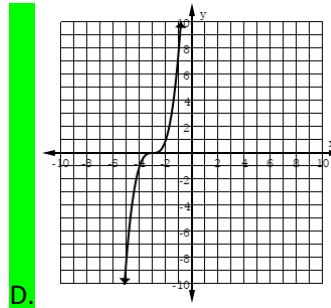
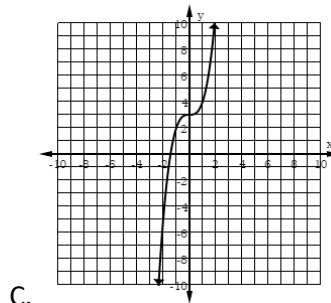
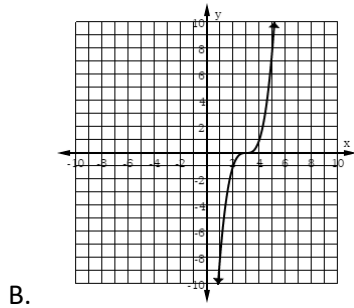
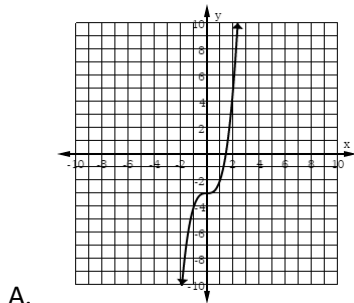
- A. Reflection over the x-axis, vertical stretch, horizontal shift left 2 units, and a vertical shift 3 units down
- B. Reflection over the y-axis, vertical shrink, horizontal shift right 2 units, and a vertical shift 3 units up
- C. Reflection over the x-axis, vertical shrink, horizontal shift left 2 units, and a vertical shift 3 units down
- D. Reflection over the y-axis, vertical stretch, horizontal shift right 2 units, and a vertical shift 3 units up

ITEM 51

This graph shows a function $f(x)$.

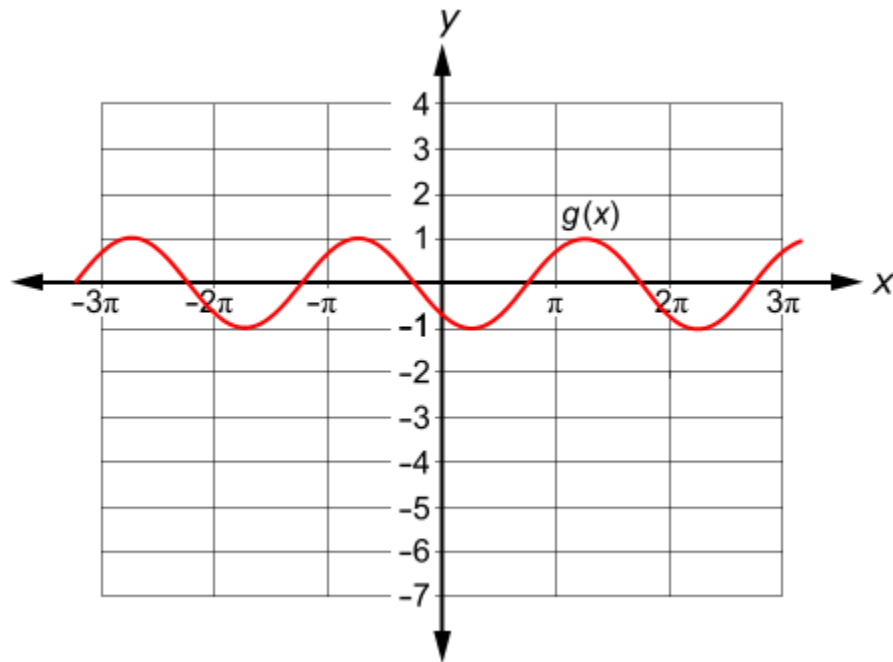


Which graph shows $f(x + 3)$?



ITEM 52

The function $f(x) = \cos x$. The function $g(x)$ is a transformation of $f(x)$. A portion of the graph of $g(x)$ is shown below.

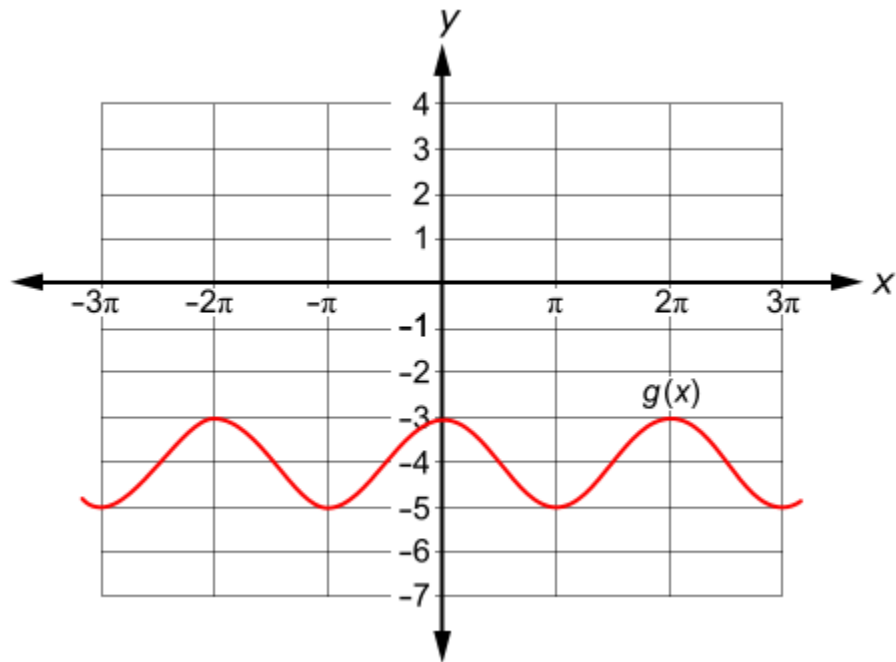


What is the equation of $g(x)$?

- A. $g(x) = 4 \cos x$
- B. $g(x) = 4 \cos x - 4$
- C. $g(x) = 4 \cos 4x$
- D. $g(x) = \cos(-x)$

ITEM 53

The function $f(x) = \cos$. The function $g(x)$ results from a transformation of $f(x) = \cos$. A portion of the graph is shown below.

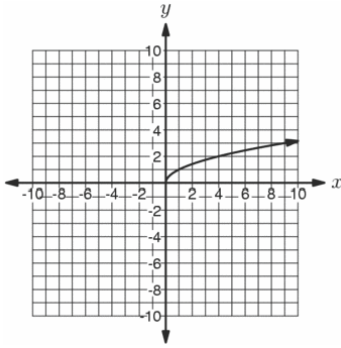


What is the equation of $g(x)$?

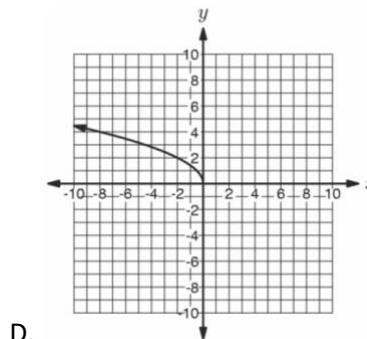
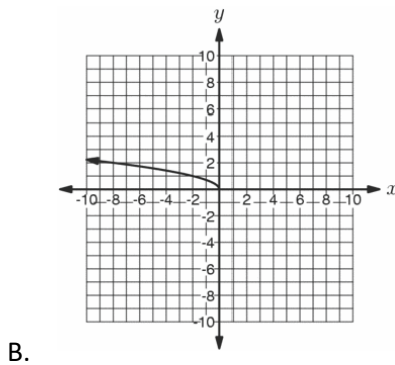
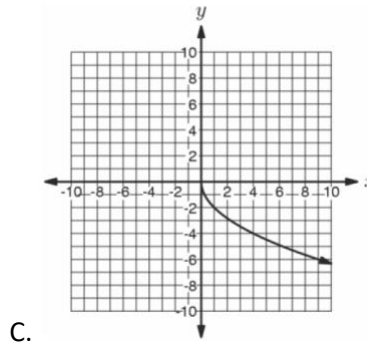
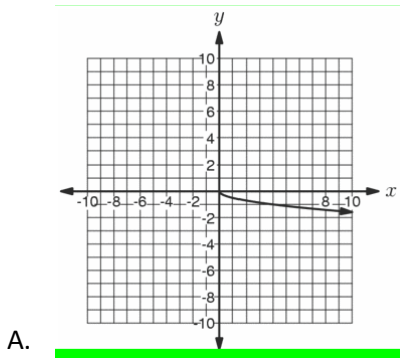
- A. $g(x) = \cos - 3$
- B. $g(x) = \cos - 4$**
- C. $g(x) = \cos 4$
- D. $g(x) = 4 \cos$

ITEM 54

The graph of the function $y = \sqrt{x}$ is shown.



Which graph shows the function $y = -\frac{1}{2}\sqrt{x}$?



Functions
A2: F-BF.B.4a

ITEM 55

Which function is the inverse of $f(x) = \frac{4}{2x^2 - 3}$?

A. $g(x) = \sqrt{\frac{8}{x} + 6}$

B. $g(x) = \sqrt{\frac{2}{x} + \frac{3}{2}}$

C. $g(x) = \sqrt{\frac{2x^2 - 3}{4}}$

D. $g(x) = \sqrt{\frac{1}{8x} + \frac{3}{2}}$

Functions
A2: F.TF.A.1
Items 56– 59

ITEM 56

What is the radian measure of a sector within a circle that has a diameter of 20 inches and an arc length of 4 inches?

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

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

C. $\frac{2}{5}$ radians

D. 5 radians

ITEM 57

Which statement best explains why $180^\circ = \pi$ radians?

- A. The area of the unit circle is square units.
- B. The circumference of the unit circle is units.
- C. The arc length of a 180° arc on the unit circle is units.
- D. The diameter of the unit circle is units, which is the same as 180° .

Functions
A2: F-TF.B.5

ITEM 58

Given an amplitude of 3, frequency of 4, and a midline of $y = 2$, choose the function that best models the information.

A. $y = 3 \sin \left(\frac{1}{4}x - 1 \right) + 2$

B. $y = 3 \cos (4x + 3) - 2$

C. $y = -3 \cos (4x - 1) + 2$

D. $y = -3 \sin (2x + 3) + 1$

Functions
A2: F-TF.C.8

ITEM 59

If $\sin \theta = \frac{5}{8}$ and θ is an element of Quadrant II, find $\cos \theta$.

A. $\cos \theta = \frac{39}{8}$

B. $\cos \theta = -\frac{39}{8}$

C. $\cos \theta = \frac{89}{8}$

D. $\cos \theta = -\frac{89}{8}$

Statistics and Probability
A2: S-IC.A.1
Items 60 – 66

ITEM 60

Which statement is true about the relationship between populations and samples?

- A. Populations are portions of samples.
- B. Samples and populations are always equal in size.
- C. Samples are always representative of a population.
- D. Representative samples can be used to make predictions about a population.

ITEM 61

A biologist is estimating the trout population in a small lake by capturing 55 trout, tagging them, and releasing them back into the lake. What is the sample in this study?

- A. the biologist
- B. the small lake
- C. the tagged trout
- D. all of the trout in the lake

ITEM 62

All the employees in a manufacturing company were asked to rate their managers' performance. Of the 200 employees in the company, 83 completed surveys. Which sentence describes the most important difference between the sample and the population?

- A. The sample is less than half the size of the population.
- B. The sample included only employees who received a survey.
- C. The sample is an odd number and the population is an even number.
- D. The sample likely included only employees who were comfortable sharing their opinions.

Statistics and Probability
A2: S-IC.A.2

ITEM 63

Janice flipped a nickel 100 times. The nickel landed on heads 53 times and on tails the remainder of the time. Before flipping the nickel 100 more times, Janice and DeWayne have this argument.

- Janice: It looks like the probability of landing on heads is 53%. Therefore, the nickel will land on heads 53 times.
- DeWayne: The nickel was supposed to land on heads 50 times. Because it landed on heads 3 extra times, this time it will land on heads only 47 times.

Whose reasoning is correct?

A. neither Janice's nor DeWayne's

B. only Janice's

C. only DeWayne's

D. both Janice's and DeWayne's

Statistics and Probability
A2: S-IC.B.3

ITEM 64

Scientists learn about the world using surveys, experiments, and observational studies. Which of these procedures is an experiment?

- A. Jane asks 100 randomly chosen people at a grocery store what pets they own.
- B. Jane goes to a park every day for a week and records the breeds of all the dogs that are walked there.
- C. Jane gives half of the cats at a shelter brand X food and half brand Y food and records any changes in the cats' weights.
- D. Jane asks students what their grade point average is and whether they own a dog, then examines whether there is a correlation between dog ownership and grades.

Statistics and Probability
A2: S-IC.B.4

ITEM 65

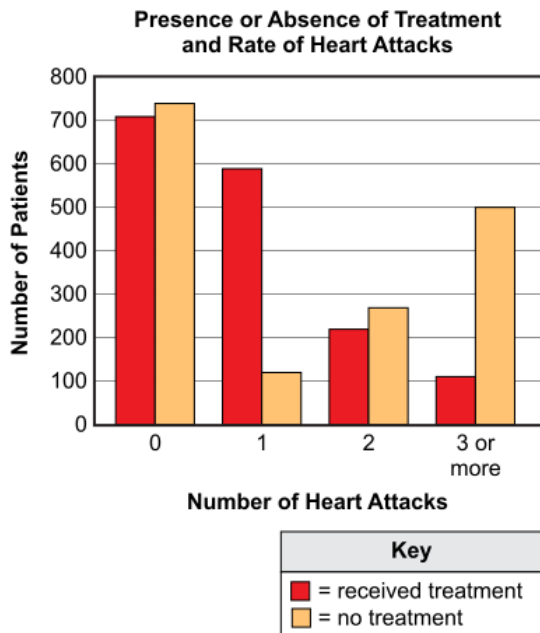
A survey finds that 16% of the population of a town regularly rides the bus, with a margin of error of 2% and a 95% confidence interval. What is the meaning of this finding?

- A. There is a 95% probability that between 14% and 18% of the population rides the bus.
- B. There is a 95% probability that between 15% and 17% of the population rides the bus.
- C. There is a 95% probability that the percent of the population who rides the bus is either greater than 16.2% or less than 15.8%.
- D. There is a 95% probability that the percent of the population who rides the bus is either greater than 16.02% or less than 15.98%.

Statistics and Probability
A2: S-IC.B.5

ITEM 66

Use the double-bar graph to answer the question.



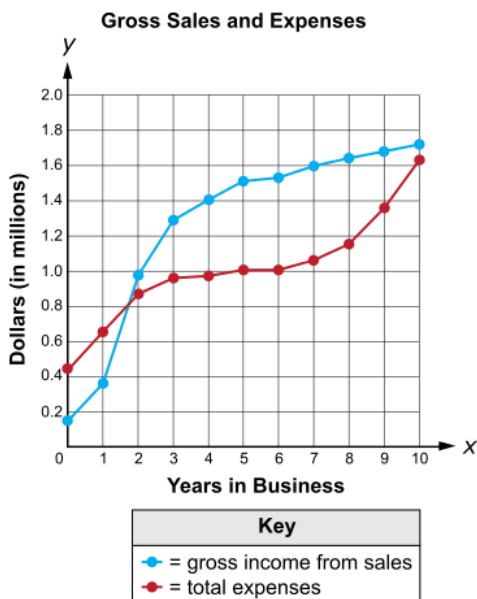
Medical researchers found many patients at high risk for heart attacks, and divided them randomly into two groups. One group received an experimental treatment for 15 years, and the other group did not. The results are summarized in the graph. The researchers claim that the experimental treatment reduces heart attack rates. Does the data support the researchers' claim? Why or why not?

- A. No. The percent of patients who had heart attacks was nearly the same in both the treatment and the no- groups.
- B. No. Patients who had zero heart attacks were more likely to be in the no-treatment group than in the treatment group.
- C. Yes. Patients in the treatment group were much less likely to have a heart attack during the study than patients in the no-treatment group.
- D. Yes. The treatment group was more likely to have just one heart attack, while the no-treatment group was more likely to have three or more heart attacks.

Statistics and Probability
A2: S-IC.B.6
Items 67 – 68

ITEM 67

Use the graph to answer the question.



The manager of a business creates this graph showing sales and expenses. He makes this report:

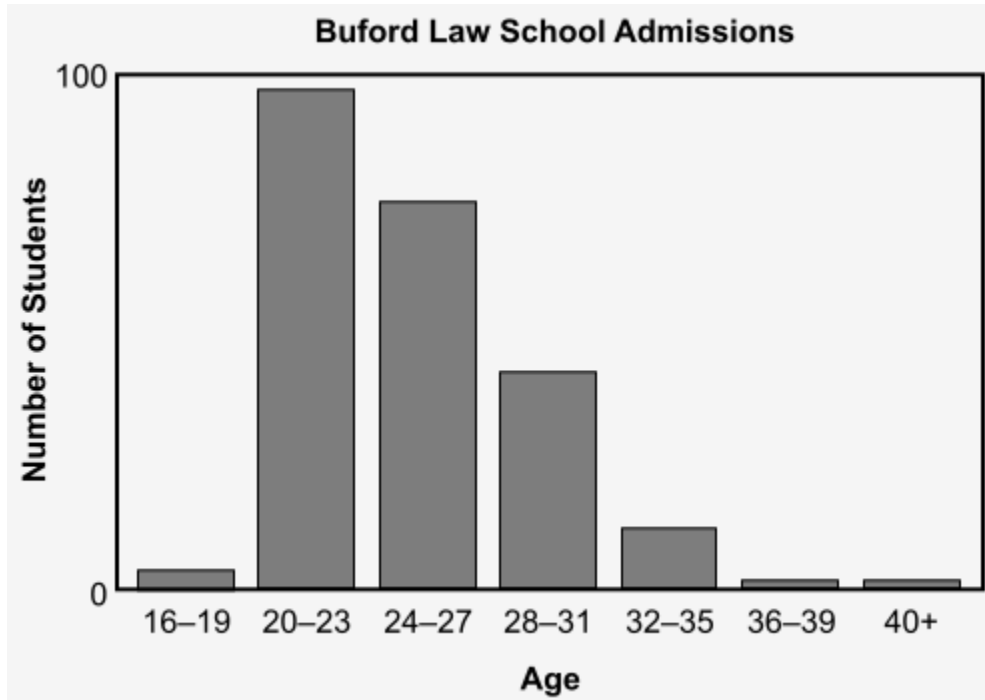
Our business is doing remarkably well. In the ten years we have been in business, our sales have increased every year. We are poised to have increasing profits throughout the next ten years.

Is the last sentence of the report reasonable? Why or why not?

- A. No. Growth in sales has been decreasing and will probably soon stop altogether.
- B. Yes. Sales have increased every year and will most likely continue to increase.
- C. Yes. During the last three years, sales have increased rapidly and will soon be greater than expenses.
- D. No. During the last three years, the difference between sales and expenses has been decreasing quickly.

ITEM 68

This distribution shows the ages of students entering Buford Law School.



Based on the distribution, which conclusion is valid?

- A. Nobody older than 40 entered law school.
- B. Most entering law students were in their 20s.**
- C. At least one entering law student was 16 years old.
- D. The most common age of entering law students was 24