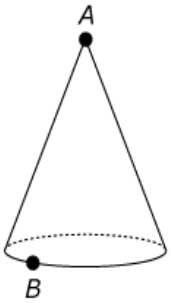
Grade 8 – Math

This task requires students to apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world problems in two and three dimensions.

QUESTION:

A right circular cone is shown in the figure. Point *A* is the vertex of the cone and point *B* lies on the circumference of the base of the cone.



The cone has a height of 24 units and a diameter of 20 units. What is the distance from point *A* to point *B*?

_____ units

ANSWER:

The correct answer is 26 units.

Apply the Pythagorean Theorem – $a^2 + b^2 = c^2$ – to determine unknown side lengths in right triangles.

$a^2 + b^2 = c^2$
a = the height of the cone (24 units)
b = half of the diameter of the base of the cone (10 units)

So: $24^2 + 10^2 = c^2$
$576 + 100 = c^2$
$676 = c^2$
$26 = c$