

Alg 1 SOL Released Questions:

Radicals

When $x > 0$ and $y > 0$, which expression is equivalent to $\sqrt{180x^9y^{16}}$ in simplest form?

A $3x^3y^4\sqrt{20}$

B $3x^4y^8\sqrt{20x}$

C $6x^3y^4\sqrt{5}$

D $6x^4y^8\sqrt{5x}$

What is $\sqrt[3]{3,456}$ in simplest form?

A $2\sqrt[3]{12}$

B $6\sqrt[3]{16}$

C $12\sqrt[3]{2}$

D $24\sqrt[3]{6}$

Which value can be placed under the radical symbol to make this statement true?

$$\sqrt[3]{\square} = 5\sqrt[3]{7}$$

- A 35
- B 245
- C 875
- D 1715

What is the value of this expression when $a = 8$, $b = 16$, and $c = -4$?

$$5\sqrt[3]{a} - c\sqrt{b} + 9$$

A 30

B 35

C 50

D 51

In simplest radical form, $\sqrt{845}$ is equal to —

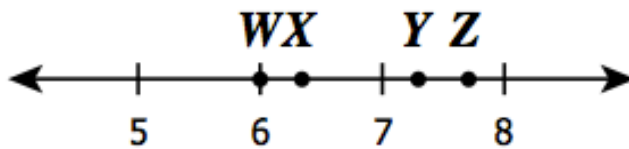
F 13

G $13\sqrt{2}$

H $13\sqrt{3}$

J $13\sqrt{5}$

Which labeled point on the number line is closest to $\sqrt{40}$?



- A** *W*
- B** *X*
- C** *Y*
- D** *Z*

What is $\sqrt{192}$ expressed in *simplest* radical form?

A $8\sqrt{3}$

B $6\sqrt{5}$

C $4\sqrt{12}$

D $2\sqrt{48}$

If $f(x) = \frac{\sqrt{9-x}}{4}$ what is $f(5)$?

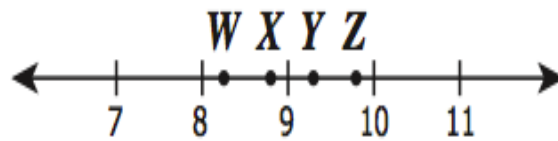
F $\frac{3-\sqrt{5}}{4}$

G $\frac{1}{2}$

H $\frac{\sqrt{14}}{4}$

J 1

Which labeled point on the number line is closest to the square root of 85 ?



- F** W
- G** X
- H** Y
- J** Z

Written in simplest radical form, $\sqrt{32}$ is equal to —

A $2\sqrt{4}$

B $2\sqrt{16}$

C $4\sqrt{2}$

D $8\sqrt{2}$

The expression

$$5\sqrt{7}$$

is the simplest radical form of —

F $\sqrt{1,225}$

G $\sqrt{245}$

H $\sqrt{175}$

J $\sqrt{35}$

What is $\sqrt{180}$ written in simplest radical form?

A $5\sqrt{6}$

B $4\sqrt{45}$

C $6\sqrt{5}$

D $6\sqrt{30}$

What is $\sqrt{108}$ written in simplest radical form?

F $2\sqrt{27}$

G $3\sqrt{12}$

H $6\sqrt{3}$

J $18\sqrt{3}$

Which is closest to the value of q if

$$q = \sqrt{177} - \sqrt{256} ?$$

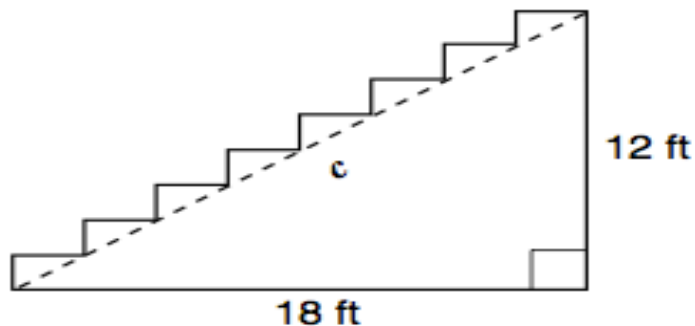
F 29.3

G 24.5

H -1.3

J -2.7

A board that is c feet long supports the stairs as shown below.



To find the value of c , Britney used the following expression.

$$\sqrt{12^2 + 18^2}$$

What is c to the nearest tenth of a foot?

- A** 36.0 ft
- B** 30.0 ft
- C** 21.6 ft
- D** 13.4 ft

Which is the simplest radical form of $\sqrt{52}$?

F $13\sqrt{2}$

G $\sqrt{52}$

H $4\sqrt{13}$

J $2\sqrt{13}$

Which is closest to the value of

$$(2\sqrt{3})(6\sqrt{2})?$$

- A** 7.7
- B** 8.5
- C** 18.0
- D** 29.4

Which is closest to the value of x if

$x = 2\sqrt{7}$?

A 3.2

B 3.7

C 5.3

D 9.9

What is the value of $\frac{\sqrt{3.2}}{2}$ to the nearest tenth?

F 0.7

G 0.9

H 1.3

J 1.5

Which is closest to the value of x if

$$x = 3\sqrt{11} + 4\sqrt{11}?$$

- A 13.6
- B 23.2
- C 77
- D 132

The height of an equilateral triangle can be determined by evaluating the expression $\frac{n\sqrt{3}}{2}$ where n is the length of a side of the triangle. To the nearest tenth of an inch, what is the height of an equilateral triangle with sides of 6.5 inches?

- F 3.5 in.
- G 4.8 in.
- H 5.6 in.
- J 10.4 in.

Which is closest to the value of $3\sqrt{5}$?

- A 3.9**
- B 6.7**
- C 7.5**
- D 8.7**

Which is closest to the value of $\sqrt{12} \cdot \sqrt{15}$?

F 52.0

G 13.5

H 13.4

J 6.7

In kilometers, the approximate distance to the earth's horizon from a point h meters above the surface can be determined by evaluating the expression $\sqrt{12h}$. About how far is the apparent horizon to a person looking out to sea from the top of a cliff 350 meters above sea level?

- A 21 km
- B 65 km
- C 130 km
- D 225 km

Which is closest to the value of $\frac{\sqrt{17}}{\sqrt{10}}$?

F 0.8

G 1.3

H 1.7

J 2.6