

S.EE.2 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes.

Sunil wants to find a side length of a cube with a volume of 27 cubic units. To find the length of one side, Sunil sets up the following equation: $s^3 = 27$. Which equation below shows the correct value of s ?

- A. $s = \sqrt{27}$
 B. $s = \sqrt[3]{3}$
 C. $s = 3^3$
 D. $s = \sqrt[3]{27}$

$V = 27$

Which square root below is approximately equal to 2?

- A. $\sqrt{3} \approx 1.732$
 B. $\sqrt{5} \approx 2.236$
 C. $\sqrt{7} \approx 2.645$
 D. $\sqrt{8} \approx 2.8$

What is $\sqrt{7}$ approximated to the nearest hundredth?

- A. 2.60
 B. 2.64
 C. 2.65
 D. 3.50

A planter box in the shape of a cube had a volume of 125 cubic inches. What was the length of one edge of the box?

- A. 5 inches
 B. 15 inches
 C. 25 inches
 D. 42 inches

$\sqrt[3]{125}$

Which equation has **both** 4 and -4 as possible values of y ?

- A. $y^2 = 8$
 B. $y^3 = 8$
 C. $y^2 = 16$
 D. $y^3 = 64$

$y^2 = 16$
 $y = \sqrt{16}$
 $\sqrt{16} = \pm 4$

Which statement **best** describes the value of $\sqrt{8}$?

- A. The value of $\sqrt{8}$ is between 2 and 2.5.
 B. The value of $\sqrt{8}$ is between 2.5 and 3.
 C. The value of $\sqrt{8}$ is between 3 and 3.5.
 D. The value of $\sqrt{8}$ is between 3.5 and 4.

A square garden has an area of 64 square meters. The equation below can be used to determine the length (x), in meters, of each side of the garden.

$x^2 = 64$

Which expression represents the length of each side of the garden?

- A. $\sqrt{64}$ meters
 B. $64 \div 2$ meters
 C. $64 \cdot 2$ meters
 D. 64^2 meters

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Find the value of $3x-2x^2$ when $x = -3$.

- (A) -27
 B) -18
 C) 0
 D) 9

$$3(-3) - 2(-3)^2$$

$$3(-3) - 2(9)$$

$$-9 - 18 = -27$$

A square-shaped playground has an area of 290 ft^2 . Approximately how long is one side of the playground?

- A) 12 ft
 B) 17 ft
 C) 36 ft
 D) 73 ft

$$A = 290$$

$$S = \sqrt{A}$$

$$S = \sqrt{290}$$

$$S \approx 17$$

Why is one of the square roots of any positive number less than zero?

- (A) because a negative number times a negative number is a positive number
 B) because a negative number times a negative number is a negative number
 C) because a negative number times a positive number is a negative number
 D) because a negative number times a positive number is a positive number

Which of the following best represents $\sqrt{39}$? A number between...

- A) 3 and 4
 B) 6 and 7
 C) 7 and 8
 D) 8 and 10

A right triangle has legs 5 units and 8 units in length and hypotenuse x units in length.

Part A

What is the exact value of x ? Leave your answer in terms of a square root.

$$a^2 + b^2 = c^2$$

$$8^2 + 5^2 = c^2$$

$$64 + 25 = c^2$$

$$89 = c^2$$

$$c = \sqrt{89}$$



Between what two consecutive whole numbers is the value of x ? Explain your answer.

$\sqrt{89}$ is between $\sqrt{81}$ & $\sqrt{100}$ so between 9 & 10

Part B

The side length of another right triangle is $\sqrt{75}$ units. Determine the length of this side to the nearest tenth. Show your work and explain your answer.

$\sqrt{75}$ is between $\sqrt{64}$ & $\sqrt{81}$ so between

8 & 9

8.6	
x 8.6	
73.96	

8.7	
x 8.7	
75.69	

$\sqrt{75} \approx 8.7$