

Grade 8 - Square Roots and Cube Roots - Quiz

Common Core 8.EE.A.2 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

Pick the best answer for each of the 10 questions about square roots, cube roots and equations of the form x squared or x cubed equals p (Common Core 8.EE.A.2). Read each question carefully, then read the explanation to learn from any mistake.

Grade 8 · Common Core State Standards: **8.EE.A.2**

Questions

Question 1

What is $\sqrt{169}$?

- A. 12
- B. 14
- C. 84.5
- D. 13

Question 2

What is $\sqrt[3]{512}$?

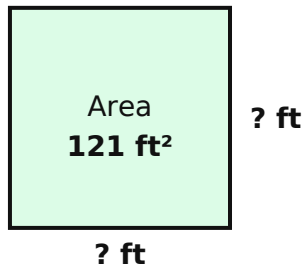
- A. 8
- B. 7
- C. 16
- D. 170

Question 3

Solve $x^2 = 64$.

- A. $x = 8$
- B. $x = 32$
- C. $x = \pm 8$
- D. $x = \pm 32$

Question 4



Square patio.

What is the side length of the square patio?

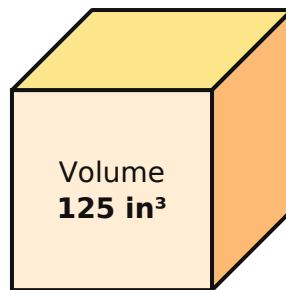
- A. 12 ft
- B. 11 ft
- C. 60.5 ft
- D. 121 ft

Question 5

Between which integers is $\sqrt{75}$?

- A. 7 and 8
- B. 8 and 9
- C. 9 and 10
- D. 37 and 38

Question 6



Cube-shaped box.

What is the edge of this cube?

- A. 25 in
- B. 15 in
- C. 5 in
- D. 62.5 in

Question 7

Solve $3x^3 = 81$.

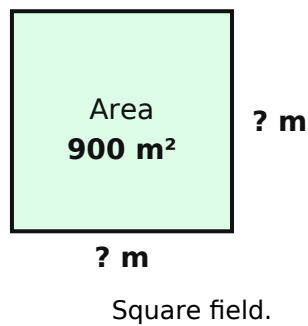
- A. $x = 3$
- B. $x = 27$
- C. $x = 9$
- D. $x = \pm 3$

Question 8

A square patio at a library has an area of 150 square feet. About how long is each side?

- A. 75 ft
- B. 12.2 ft
- C. 15 ft
- D. 37.5 ft

Question 9



How many meters of fence enclose this square field?

- A. 120 m
- B. 30 m
- C. 60 m
- D. 900 m

Question 10

Which statement is true?

- A. $\sqrt{2} = 1.4$
- B. $\sqrt{2} = \frac{3}{2}$
- C. $\sqrt{2}$ is a whole number
- D. $\sqrt{2}$ is irrational

Answers

1. **D** - $13 \cdot 13 = 169$. Halving 169 is a common mistake.
2. **A** - $8^3 = 512$. Dividing by 3 is a typical error.
3. **C** - Both 8 and -8 square to 64. Dividing by 2 gives the wrong 32.
4. **B** - $11^2 = 121$.
5. **B** - $8^2 = 64$ and $9^2 = 81$. 75 lies between 64 and 81.
6. **C** - $5^3 = 125$, so the edge is 5 inches.
7. **A** - Divide by 3 to get $x^3 = 27$, so $x = 3$. A cube has one real solution.
8. **B** - The side is the square root of 150, about 12.2, because 12.2 squared is about 148.8 and 12.3 squared is 151.3. Dividing by 2 or by 4 is a common mistake.
9. **A** - Side = 30 m, so perimeter = $4 \times 30 = 120$ m. Stopping at 30 is a common mistake.
10. **D** - $1.4^2 = 1.96$ and $1.5^2 = 2.25$, so $\sqrt{2}$ is between them and never ends or repeats.

Remember

- $\sqrt{81} = 9$ because $9^2 = 81$; $\sqrt[3]{125} = 5$ because $5^3 = 125$.
- $x^2 = p$ with $p > 0$ has two solutions: $x = \pm\sqrt{p}$.
- $x^3 = p$ has one real solution: $x = \sqrt[3]{p}$.
- Know the perfect squares up to 15^2 and the perfect cubes up to 5^3 .
- Roots of non-perfect squares, like $\sqrt{20}$, are irrational and can be estimated.