

Name: _____ Date: _____

Squares and Square Roots

Multiple Choice

Indicate the answer choice that best completes the statement or answers the question.

Find each square root.

1. $\sqrt{121}$
a. 13 **b.** 11
c. 10 **d.** 60

Evaluate each expression.

2. 30^2
a. 60 **b.** 27,000
c. 1,600 **d.** 900

Write each power as a product of the same factor.

3. 1^2
a. 2 **b.** 1×1
c. $1 \times 1 \times 1$ **d.** 1

4. 5^2
a. $2 \times 2 \times 2 \times 2 \times 2$ **b.** $5 \times 5 \times 5$
c. 5 **d.** 5×5

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5. What is the square of 16?

- a.** 2
- b.** 4
- c.** 8
- d.** 256

6. A square room has an area of 256 square feet. What would be the perimeter of the room?

- a.** 16 ft
- b.** 20 ft
- c.** 64 ft
- d.** 128 ft

7. Estimate the square root of 37

- a.** between 4 and 5
- b.** between 5 and 6
- c.** between 6 and 7
- d.** between 7 and 8

8. Estimate the square root of 70

- a.** 6
- b.** 7
- c.** 8
- d.** 9

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9. Estimate the square root of 129

a.

b.

Subjective Short Answer

10. A square classroom has an area of 1,225 square feet. A carpenter has been asked to install baseboards around the perimeter of the room. How many feet of wood will the carpenter need to purchase in order to complete the baseboards in the classroom?

11. The courtyard of Jeffersonville High School is in the shape of a square. The length of one side of the courtyard is 68 feet. What is the area of the courtyard in square feet?

12. Write 9^6 as a product of the same factor, and then write the value in standard form.

13. A large cube has a base area of 196 square units. How many unit cubes does it take to build a large cube?

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Answer Key

1. b

2. d

3. b

4. d

5. d

6. c

7. c

8. c

9. b

10. The carpenter will need 140 feet of wood for the classroom baseboards.

$$\sqrt{1225} = 35$$

$$35 \times 4 = 140$$

11. 4,624 square ft

Since the courtyard is a square, all of the dimensions are 68 feet.

So, $68 \times 68 = 68^2 = 4,624$ square feet.

12. $9^6 = 9 \cdot 9 \cdot 9 \cdot 9 \cdot 9 \cdot 9 = 531,441$

13. It would take 2,744 unit cubes to build a large cube.

$$\sqrt{196} = 14$$

$$14 \cdot 14 \cdot 14 = 14^3 = 2,744$$