

## Squares and Square Roots

### Math Content

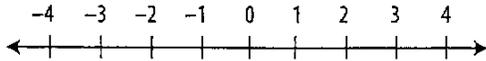
Students will calculate squares and square roots of numbers, use area models to multiply mixed numbers, and solve problems involving area of squares.

- What is the area of a square with each given side length?
  - 50 centimeters  
\_\_\_\_\_
  - 10 inches  
\_\_\_\_\_
  - 6 feet  
\_\_\_\_\_
  - 1.8 miles  
\_\_\_\_\_
- What is the approximate side length of a square with each given area? Round each answer to the nearest whole number.
  - $140 \text{ mm}^2$   
\_\_\_\_\_
  - $35 \text{ yd}^2$   
\_\_\_\_\_
  - $255 \text{ km}^2$   
\_\_\_\_\_
  - $1,300 \text{ in}^2$   
\_\_\_\_\_
- What is the square of the square root of 300?
  - 17.3
  - 300
  - 900
  - 90,000
- How do you find the length of the sides of a square given its area?
  - Square the area.
  - Divide the area by 4.
  - Multiply the area by 4.
  - Take the square root of the area.
- For which of the following does the calculation give an exact, two-digit number?
  - $\sqrt{1.44}$
  - $\sqrt{10.5}$
  - $\sqrt{23}$
  - $\sqrt{120}$
- Use an area model to multiply the mixed numbers.
  - $1\frac{1}{4} \times 4\frac{1}{4}$   
\_\_\_\_\_
  
  
  
  
  
  
  
  
  
  
  - $4\frac{1}{2} \times 8\frac{1}{4}$   
\_\_\_\_\_

## Squares and Square Roots

7. Place the following points on the number line below:

A:  $\sqrt{11}$                       D:  $-1$   
 B:  $-\sqrt{2}$                       E:  $\sqrt{3}$   
 C: 3.8                              F:  $-2$



8. Serge buys a bag of 1-centimeter square tiles. There are 350 tiles in the bag. If he wants to use the tiles to make a square mosaic, what will be the approximate length of its sides?
- \_\_\_\_\_

9. A worker wants to paint a square wall. One side of the wall measures 21 feet.

a. What is the area of the wall?

\_\_\_\_\_

b. The worker has one can of paint. If one can of paint covers 400 square feet, will he have enough paint to cover the wall? Explain.

\_\_\_\_\_

\_\_\_\_\_

c. What are the dimensions of the square that the worker can paint with one can of paint?

\_\_\_\_\_

\_\_\_\_\_

10. Mya has enough grass seed to cover a plot that has an area of 240 square feet. If she wants to plant a square plot of grass seed, what will be the approximate length of the sides of her plot?
- \_\_\_\_\_

11. Pero is making a pen for his dog. He has enough fencing to make a square pen that has 28-foot sides. What will be the area of the pen?
- \_\_\_\_\_

### Review

12. How many millions are in one trillion?

A. 10                              C. 1,000  
 B. 100                            D. 1,000,000

13. Which of these numbers is prime?

A. 990                            C. 992  
 B. 991                            D. 993

14. A scout leader has fourteen scouts. She wants to prepare three paper bags for each of them for a camping trip. Each paper bag will have four baggies in it. Each baggy will contain ten pieces of food. How many of each item—paper bags, baggies, and pieces of food—will she have to buy? Show your work.