

LESSON
1-5 **Problem Solving**
Square Roots and Real Numbers

1. Jack is building a square pen for his dog. If he wants the area of the pen to be 121 square feet, how long should he make each side of the pen?

2. Danny needs a square-shaped picture to cover a hole in his wall. It has to cover at least 441 square inches of wall space. What is the smallest side length the picture can have?

3. The Statue of Liberty, which sits on Liberty Island in New York Harbor, is $151\frac{1}{12}$ feet high, from base to torch. Write all classifications that apply to $151\frac{1}{12}$: natural, whole, integer, rational, terminating decimal, repeating decimal, and irrational.

4. A square note card has an area of 5 in^2 . Estimate the length of the side to the nearest tenth. Then write all classifications that apply to the actual side length: natural, whole, integer, rational, terminating decimal, repeating decimal, and irrational.

Use the table below to answer questions 5–7, which shows the area of four sizes of square-shaped pizzas sold at Town Pizza. Complete the table by finding the length of each side of the four pizzas. Round to the nearest tenth if needed. Select the best answer.

5. What is the length of each side of an extra large pizza?

A 24 in.	C 26 in.
B 25 in.	D 36 in.
6. Which of the following classifications applies to the length of each side of a large pizza?

F natural	H integer
G whole	J rational
7. Which of the following is NOT a classification for the length of each side of a small pizza?

A whole	C rational
B irrational	D integer

Pizza Size	Area (in ²)	Side length (in.)
Small	100	
Medium	200	
Large	420.25	
Extra Large	576	