

# Practice 3-1

## Exploring Square Roots and Irrational Numbers

Find the two square roots of each number.

1. 81

\_\_\_\_\_

2.  $\frac{9}{49}$

\_\_\_\_\_

3.  $\frac{1}{121}$

\_\_\_\_\_

Find each square root. Round to the nearest tenth if necessary.

4.  $\sqrt{130}$

\_\_\_\_\_

5.  $\sqrt{8}$

\_\_\_\_\_

6.  $\sqrt{144}$

\_\_\_\_\_

7.  $\sqrt{182}$

\_\_\_\_\_

8.  $\sqrt{256}$

\_\_\_\_\_

9.  $\sqrt{301}$

\_\_\_\_\_

Identify each number as *rational* or *irrational*.

10.  $\sqrt{16}$

\_\_\_\_\_

11.  $\sqrt{11}$

\_\_\_\_\_

12.  $\frac{4}{5}$

\_\_\_\_\_

13.  $0.\overline{712}$

\_\_\_\_\_

14. -8

\_\_\_\_\_

15.  $\sqrt{3}$

\_\_\_\_\_

16. 5.2

\_\_\_\_\_

17.  $-\sqrt{25}$

\_\_\_\_\_

Use  $s = 20\sqrt{273 + T}$  to estimate the speed of sound  $s$  in meters per second for each Celsius temperature  $T$ . Round to the nearest integer.

18.  $37^\circ\text{C}$

\_\_\_\_\_

19.  $-1^\circ\text{C}$

\_\_\_\_\_

20.  $15^\circ\text{C}$

\_\_\_\_\_

Find the value of each expression.

21.  $\sqrt{(49)^2}$

\_\_\_\_\_

22.  $(\sqrt{169})^2$

\_\_\_\_\_

23.  $\sqrt{(2.7)^2}$

\_\_\_\_\_

Estimate the value of each expression to the nearest integer.

24.  $\sqrt{5}$

\_\_\_\_\_

25.  $-\sqrt{4}$

\_\_\_\_\_

26.  $\sqrt{3}$

\_\_\_\_\_

# Puzzle 3-1

## Exploring Square Roots and Irrational Numbers

Use the clues to find each integer.

1. My principal square root is 7. Who am I?  
\_\_\_\_\_
2. My square root is 6. Who am I?  
\_\_\_\_\_
3. One of my square roots is  $-4$ . Who am I?  
\_\_\_\_\_
4. One of my square roots is 9. Who am I?  
\_\_\_\_\_
5. My absolute value is the same as me. I am one of the square roots of 64. Who am I?  
\_\_\_\_\_
6. My absolute value is 8 more than me. Who am I?  
\_\_\_\_\_
7. I am a famous integer. I don't change at all when someone takes my principal square root. Who am I?  
\_\_\_\_\_
8. When someone tries to take my square root with a calculator, the result is an approximation. But that's not true for the next higher integer. Who am I?  
\_\_\_\_\_

Use your answers to find the answer to the following.

Magnet Cove in this state claims to contain 102 varieties of minerals.

1    2    3    4    5    6    7    8

A	A	L	S	M	K	Z	N	B	S	R	A
1	81	4	3	-3	16	-7	8	12	-4	36	49

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