**Write each number in $\frac{m}{n}$ form where $m$ and $n$ are integers with $n \neq 0$. Simplify your answers.**

1. 20.75

2. $-0.48$

3. $4\frac{6}{13}$

4. $-\frac{39}{56}$

5. 1.34

6. 60%

**For each pair of numbers, find the absolute value of each number. Then, determine which number is farther from 0 on the number line.**

7. $-16$ and $-18$

8. $-\frac{15}{4}$ and $\frac{18}{7}$

9. 2.36 and $-2.7$

10. $\frac{31}{3}$ and $\frac{40}{6}$

**Using long division, write each rational number as a decimal. Use the bar notation if the rational number is a repeating decimal.**

**11** $\frac{7}{56}$

**12** $9\frac{13}{20}$

**13** $\frac{100}{11}$

**14** $-\frac{5}{12}$

**15** $-2\frac{9}{55}$

**16** 47%

**Use the irrational numbers below for questions 17 to 20.**

$\sqrt{31}, -\sqrt{112}, \sqrt[3]{142}, -\frac{1}{4}\pi^3$

17 Using rational numbers, find a segment with a distance of not more than 0.1 to locate each irrational number approximately on the real number line.

18 Write a rational approximation of each irrational number correct to 2 decimal places.

19 Graph on a real number line the interval and the approximate location of each irrational number.

20 Order the irrational numbers from greatest to least using the symbol $>$.

**Use the real numbers below for questions 21 to 24.**

$$-12\frac{3}{8},\ \frac{90}{7},\ -\sqrt{49},\ \sqrt{164},\ -8.207$$

**21** Find the absolute value of each real number in decimal form, correct to three decimal places.

**22** Graph each real number on a real number line.

**23** Order the numbers from least to greatest using the symbol $<$.

**24** *Math Journal* Explain why the product of a nonzero rational number and an irrational number is irrational.

**Solve.**

**25** Round each number to the given number of significant digits.

| Number | Number of Significant Digits | Answer |
|---|---|---|
| 0.1350 | 2 | ? |
| 3,004 | 3 | ? |
| 22.5 | 1 | ? |
| 9.03 | 2 | ? |
| 4,567 | 3 | ? |
| 507.01 | 4 | ? |
| 9,820.036 | 5 | ? |
| 6.999 | 3 | ? |

**26** The distance between New York City, New York, and Sydney, Australia, is about 15,989 kilometers. What is this distance when rounded to 2 significant digits?

**27** A dime has a mass of 2.268 grams. Round the mass of the dime to 3 significant digits.

**28** In 2009, the population of New York City was estimated at 8,391,881. Round this population estimation to the given number of significant digits.

**a)** 2 significant digits

**b)** 3 significant digits

**c)** 4 significant digits

**29** A square has an area of 72 square inches. What is the length of a side of the square correct to 2 significant digits?