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### 3-9 Dividing by Decimals - Practice and Problem Solving

Divide.

11.  $0.68 \div 3.4$

$$\begin{array}{r} 3.4 \overline{)0.68} \rightarrow 34 \overline{)6.8} \\ \underline{-0} \\ 68 \\ \underline{-68} \\ 0 \end{array}$$

13.  $2.07 \div 0.9$

$$\begin{array}{r} 0.9 \overline{)2.07} \rightarrow 9 \overline{)20.7} \\ \underline{-18} \\ 27 \\ \underline{-27} \\ 0 \end{array}$$

15.  $0.16728 \div 3.4$

$$\begin{array}{r} 3.4 \overline{)0.16728} \rightarrow 34 \overline{)1.6728} \\ \underline{-136} \\ 312 \\ \underline{-306} \\ 68 \\ \underline{-68} \\ 0 \end{array}$$

17.  $1.08 \div 2.7$

$$\begin{array}{r} 2.7 \overline{)1.08} \rightarrow 27 \overline{)10.8} \\ \underline{-108} \\ 0 \end{array}$$

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19.  $8.4 \div 0.02$

$$\begin{array}{r} 0.02 \overline{)8.4} \rightarrow 2 \overline{)840} \\ \underline{-8} \phantom{0} \\ 04 \\ \underline{-4} \\ 0 \end{array}$$

21.  $0.242 \div 0.4$

$$0.242 \div 0.4 = 2.42 \div 4$$

$$\begin{array}{r} 0.605 \\ 4 \overline{)2.420} \\ \underline{-24} \phantom{0} \\ 02 \\ \underline{-0} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

23. **MEASUREMENT** The average person's *stride length*, the distance covered by one step, is approximately 2.5 feet long. How many steps would the average person take to travel 50 feet?

Divide 50 feet by the stride length.

$$\begin{array}{r} 20 \\ 2.5 \overline{)50} \rightarrow 25 \overline{)500} \\ \underline{-50} \\ 00 \end{array}$$

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25. **GEOGRAPHY** Alaska has the longest coastline in the United States, at about 6.64 thousand miles. Florida has about 1.35 thousand miles of coastline. How many times more coastline does Alaska have than Florida? Round to the nearest tenth if necessary.

Divide the Alaska coastline by the Florida coastline.

$$\begin{array}{r} 1.35 \overline{)6.64} \rightarrow 135 \overline{)664} \\ \underline{-540} \\ 1240 \\ \underline{-1215} \\ 250 \\ \underline{-135} \\ 115 \end{array}$$

4.91 rounded to the nearest tenth is 4.9. Alaska has 4.9 more coastline than Florida.

**ALGEBRA** Use the order of operations to evaluate each expression if  $m = 88.2$ ,  $n = 3$ , and  $p = 17.5$ . Round to the nearest tenth if necessary.

27.  $\frac{m}{n}$

Substitute 88.2 for  $m$  and 3 for  $n$ .

$$\frac{m}{n} = \frac{88.2}{3}$$

Divide.

$$\begin{array}{r} 29.4 \\ 3 \overline{)88.2} \\ \underline{-6} \\ 28 \\ \underline{-27} \\ 12 \\ \underline{-12} \\ 0 \end{array}$$

$$\frac{m}{n} = 29.4$$

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29.  $\frac{mn}{p}$

$$\begin{aligned}\frac{mn}{p} &= \frac{88.2 \cdot 3}{17.5} \\ &= \frac{264.6}{17.5}\end{aligned}$$

Divide.

$$\begin{array}{r} 17.5 \overline{)264.6} \rightarrow 175 \overline{)2646.00} \\ \underline{-175} \phantom{00} \\ 896 \phantom{00} \\ \underline{-875} \phantom{00} \\ 210 \phantom{00} \\ \underline{-175} \phantom{00} \\ 350 \phantom{00} \\ \underline{350} \phantom{00} \\ 0 \end{array}$$

$$\frac{mn}{p} = 15.1$$

31.  $\frac{p}{n}$

$$\frac{p}{n} = \frac{17.5}{3}$$

Divide.

$$\begin{array}{r} 5.83 \\ 3 \overline{)17.5} \\ \underline{-15} \phantom{00} \\ 25 \phantom{00} \\ \underline{-24} \phantom{00} \\ 10 \end{array}$$

Stop the division and round to the nearest tenth.

$$\frac{p}{n} \approx 5.8$$

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33.  $\frac{p+n}{n}$

$$\frac{p+n}{n} = \frac{17.5+3}{3}$$
$$= \frac{20.3}{3}$$

Divide.

$$\begin{array}{r} 6.76 \\ 3 \overline{)20.3} \\ \underline{-18} \phantom{00} \\ 23 \phantom{00} \\ \underline{-21} \phantom{00} \\ 20 \phantom{00} \\ \underline{-18} \phantom{00} \\ 2 \phantom{00} \end{array}$$

Stop the division and round to the nearest tenth.

$$\frac{p+n}{n} \approx 6.8$$

**CARS** For Exercises 35 and 36, use the table that shows the most popular sports car colors in a recent year in North America.

Most Popular Sports Car Colors	
Color	Portion of Responses
Silver	0.2
Gray	0.17
Blue	0.16
Black	0.14
White	0.1
Red	0.09
Green	0.06
Other	0.08

35. How many times more respondents chose silver than red? Round to the nearest tenth if necessary.

Multiply 0.9 and 0.2 by 100.

$$\begin{array}{r} 2.2 \\ 9 \overline{)20.0} \\ \underline{-18} \phantom{00} \\ 20 \phantom{00} \\ \underline{-18} \phantom{00} \\ 2 \phantom{00} \end{array}$$

2.2 times more respondents chose silver than red.

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37. **MEASUREMENT** The longest vehicle tunnel in the world is the Laerdal Tunnel in Norway with a length of 15.2 miles. How many vehicles could fit in the tunnel bumper to bumper if the average vehicle length is 0.004 mile?

Divide the length of the tunnel by the average vehicle length.

$$\begin{array}{r} 0.004 \overline{)15.2} \rightarrow 4 \overline{)152,000} \\ \underline{-12} \phantom{00} \\ 32 \phantom{00} \\ \underline{-32} \phantom{00} \\ 00 \phantom{00} \\ \underline{-0} \phantom{00} \\ 00 \phantom{00} \\ \underline{0} \phantom{00} \end{array}$$

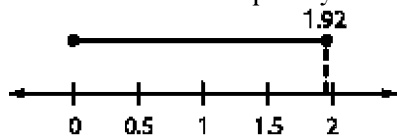
3800 vehicles could fit in the tunnel.

39. **CHALLENGE** Find two positive decimals  $a$  and  $b$  that make the following statement true. Then find two positive decimals  $a$  and  $b$  that make the statement false.

*If  $a < 1$  and  $b < 1$ , then  $a \div b < 1$ .*

Sample answer: If  $a < 1$  and  $b < 1$ , then  $a \div b < 1$ . If  $a = 0.08$  and  $b = 0.2$ , then  $a \div b = 0.4$ , which is less than 1; If  $a = 0.8$  and  $b = 0.02$ , then  $a \div b = 40$ , which is not less than 1.

41. **NUMBER SENSE** Use the number line below to determine if the quotient  $1.92 \div 0.5$  is closest to 2, 3, or 4. Do not calculate. Explain your reasoning.



$1.92 \div 0.51 \approx 2 \div 0.5$  or 4. The number line shows that there are 4 halves in 2.

43. **WRITING IN MATH** Refer to the table in Exercise 24 on the world's most populated countries. Write and solve a problem in which you would divide decimals. Include instructions for rounding in your problem.

Sample answer: How many times more people live in India than in Indonesia? Round to the nearest tenth. 4.8

$$1.13 \div .235 \approx 4.80$$

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45. The table shows the approximate number of people in the world who speak either Spanish or French.

Language	Speakers (billions)
Spanish	0.425
French	0.129

To the nearest tenth, how many times more people speak Spanish than French?

F 0.054 billion

G 0.296 billion

H 0.304 billion

J 3.295 billion

Divide the number of people who speak Spanish by the number of people who speak French.

$$\begin{array}{r} .129 \overline{) .425} \rightarrow 129 \overline{) 425.00} \\ \underline{-387} \phantom{00} \\ 380 \\ \underline{-258} \phantom{00} \end{array}$$

Stop the division.

The answer is J.

**Multiply.**

47.  $19.2 \times 2.45$

$$\begin{array}{r} 19.2 \\ \times 2.45 \\ \hline 960 \\ 768 \\ 384 \\ \hline 47.040 \end{array}$$

49.  $9.016 \times 51.9$

$$\begin{array}{r} 9.016 \\ \times 51.9 \\ \hline 81144 \\ 9016 \\ 45080 \\ \hline 467.9304 \end{array}$$

**Write an integer to represent each piece of data.**

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51. Mrs. Bezant descended four flights of stairs.

−4

53. Suki set her watch back by one hour.

−1

55. **PREREQUISITE SKILL** A number is multiplied by 8. Next, 4 is subtracted from the product. Then, 12 is added to the difference. If the result is 32, what is the number? Use the *work backward* strategy.

Work backwards.

$$32 - 12 = 20$$

$$20 + 4 = 24$$

$$24 \div 8 = 3$$

The number is 3.