

2.6 DIVIDING DECIMALS

ESSENTIAL QUESTION:

How do you divide decimals?

EXAMPLE 1

Divide.

$$1) 7.6 \div 4$$

$$\begin{array}{r} 1.9 \\ 4 \overline{)7.6} \\ -4 \downarrow \\ \hline 36 \\ -36 \\ \hline 0 \end{array}$$

$$2) 4.38 \div 12$$

$$\begin{array}{r} .365 \\ 12 \overline{)438.0} \\ 3 \downarrow \\ \hline 78 \\ -72 \downarrow \\ \hline 60 \\ -60 \\ \hline 0 \end{array}$$

ON YOUR OWN

Divide.

$$1) 36.4 \div 2$$

$$\begin{array}{r} 18.2 \\ 2 \overline{)36.4} \\ -2 \downarrow \\ \hline 16 \\ -16 \downarrow \\ \hline 04 \\ -4 \downarrow \\ \hline 0 \end{array}$$

$$2) 22.2 \div 6$$

$$\begin{array}{r} 3.7 \\ 6 \overline{)22.2} \\ 18 \downarrow \\ \hline 42 \\ -42 \\ \hline 0 \end{array}$$

$$3) 59.64 \div 7$$

$$\begin{array}{r} 8.52 \\ 7 \overline{)59.64} \\ 56 \downarrow \\ \hline 36 \\ -35 \downarrow \\ \hline 14 \\ -14 \\ \hline 0 \end{array}$$

$$4) 43.26 \div 14$$

$$\begin{array}{r} 3.09 \\ 14 \overline{)43.26} \\ -42 \downarrow \\ \hline 12 \\ -12 \downarrow \\ \hline 6 \\ -12 \downarrow \\ \hline 0 \end{array}$$

$$5) 6.2 \div 4$$

$$\begin{array}{r} 1.55 \\ 4 \overline{)6.20} \\ -4 \downarrow \\ \hline 22 \\ -20 \downarrow \\ \hline 20 \\ -20 \\ \hline 0 \end{array}$$

$$6) 3.12 \div 16$$

$$\begin{array}{r} .195 \\ 16 \overline{)3.120} \\ 16 \downarrow \\ \hline 152 \\ 144 \downarrow \\ \hline 80 \\ 80 \\ \hline 0 \end{array}$$

Dividing Decimals by Whole Numbers

1) Place the decimal point in the quotient above the decimal point in the dividend.

2) Then divide as you would with whole numbers.

3) If there is a remainder write zeros in the dividend as needed and divide until there is no remainder.

EXAMPLE 2

Divide.

1) $18.2 \div 1.4$

$$\begin{array}{r} 13. \\ 1.4 \overline{)18.2} \\ -14 \downarrow \\ 42 \\ -42 \hline 0 \end{array}$$

$$\begin{array}{r} 0.7 \\ 0.39 \overline{)0.273} \\ 0.273 \downarrow \\ 0 \end{array}$$

ON YOUR OWN

Divide.

1) $9.6 \div 1.2$

$$\begin{array}{r} 8. \\ 1.2 \overline{)9.6} \\ -8 \downarrow \\ 16 \\ -12 \hline 0 \end{array}$$

2) $57.8 \div 3.4$

$$\begin{array}{r} 17. \\ 3.4 \overline{)57.8} \\ -51 \downarrow \\ 68 \\ -68 \hline 0 \end{array}$$

3) $21.643 \div 2.3$

$$\begin{array}{r} 9.41 \\ 2.3 \overline{)21.643} \\ -207 \downarrow \\ 94 \\ -92 \hline 23 \\ -23 \hline 0 \end{array}$$

4) $0.459 \div 0.51$

$$\begin{array}{r} 0.9 \\ 0.51 \overline{)0.459} \\ -459 \hline 0 \end{array}$$

EXAMPLE 3

Divide. $2.45 \div 0.007$

$$\begin{array}{r} 350. \\ 0.007 \overline{)2.450} \\ -2 \downarrow \\ 14 \\ -14 \hline 0 \end{array}$$

ON YOUR OWN

Divide.

1) $3.8 \div 0.16$

$$\begin{array}{r} 23.15 \\ 0.16 \overline{)3.800} \\ -32 \downarrow \\ 180 \\ -16 \hline 20 \\ -16 \hline 40 \\ -32 \hline 80 \\ -80 \hline 0 \end{array}$$

2) $15.6 \div 0.78$

$$\begin{array}{r} 20. \\ 0.78 \overline{)15.60} \\ -156 \downarrow \\ 0 \end{array}$$

3) $7.2 \div 0.048$

$$\begin{array}{r} 150. \\ 0.048 \overline{)7.200} \\ -48 \downarrow \\ 240 \\ -240 \hline 0 \end{array}$$

4) $0.18 \div 0.003$

$$\begin{array}{r} 60. \\ 0.003 \overline{)0.180} \\ -18 \downarrow \\ 0 \end{array}$$

Divide Decimals by Decimals

- 1) In the divisor move decimal to the right to get a whole number.
- 2) Move decimal in dividend same number of place values you moved decimal in divisor.
- 3) Then place the decimal point in the quotient above the decimal point in the dividend and divide as you would with whole numbers.
- 4) If there is a remainder or write zeros in the dividend as needed and divide until there is no remainder.

EXAMPLE 4

Cookies for a school fundraiser cost \$3.75 per box. The total amount received from the cookie sale is \$2718.75. How many boxes of cookies were sold?

$$\begin{array}{r}
 3.75 \overline{)2718.75} \\
 -2625 \\
 \hline
 87 \\
 -75 \\
 \hline
 125
 \end{array}$$

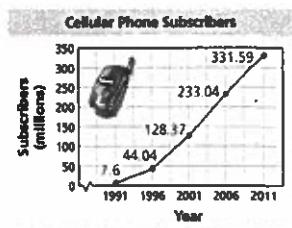
125 boxes of cookies were sold.

How many times more cellular phone subscribers were there in 2011 than in 1991? Round to the nearest whole number.

$$\begin{array}{r}
 43.6 \\
 \overline{)331.59} \\
 -304 \\
 \hline
 275 \\
 -228 \\
 \hline
 479 \\
 -456 \\
 \hline
 23
 \end{array}$$

Evaluate the expression.

1) $12.67 + 8.2 - 1.9$



There were about 44 times more subscribers in 2011 than in 1991.

2) $6.4(1.8 - 7.5)$