

Chapter 5 section 4
Dividing Decimals

Review:

a) $-8.8 - (-12.5)$

b) $12.2 + 8.35$

c) $(-2.22)(1.2)$

Vocabulary

$$\begin{array}{r} \text{quotient} \\ \text{divisor} \overline{) \text{dividend}} \\ \hline \dots \\ \text{remainder} \end{array}$$

Set up long division as you would the division of two whole numbers.

If the divisor has a decimal, move the decimal point until it is a whole number. Then move the decimal point in the dividend the same number of places in the same direction.

Divide. Add zero to the right of the decimal point until the division is complete.

Writing:

.5 should be written 0.5 so that the decimal number can be seen.

$2.5 \overline{) 1.25}$ move the decimal point in the divisor so that the number will be 25.

$25 \overline{) 12.5}$ since the decimal point was moved one place to the right in the divisor, the decimal point in the dividend is moved the same number of places in the same direction.

Use the division algorithm and divide.

$$\begin{array}{r} .5 \\ 25 \overline{) 12.5} \\ \underline{125} \\ 0 \end{array}$$

To place the decimal point in the quotient, move the decimal point straight up.
So the quotient is 0.5

For the following, how many places does the decimal point move?

a) $23 \div 20$

b) $36.99 \div 0.45$

c) $0.47 \overline{) 0.3478}$

$0.036 \overline{)4.392}$ the decimal point is moved three places in the divisor, so the decimal point in the dividend is moved three places.

$36 \overline{)4392}$. now the division can be done.
The quotient is 122

Rewrite as a long division problem so that the divisor is a whole number

a) $\frac{2.958}{0.51}$

b) $5.141 \div 0.53$

c) $7.8 \overline{)71.76}$

Dividing Signed Decimal Numbers.

Find the sign (positive, negative) of the quotient, then divide as above. Once the quotient is found, do not forget the sign.

$-0.03 \div 0.024$ The quotient is negative.

$0.024 \overline{)0.03}$ Move the decimal point in the divisor and dividend, 3 places

$24 \overline{)300.0}$ divide

Find the sign of the quotient

a) $(-11.04) \div (1.6)$

b) $0.85 \overline{)0.119}$

c) $\frac{-2.156}{-0.98}$

Find the quotient:

a) $2.5 \overline{)1.25}$

b) $0.36 \overline{)4.392}$

c) $2.3 \div 20$

d) $155.2 \div 25$

e) Convert $\frac{4}{7}$ to a decimal. round the hundredths.

Order of operations

Evaluate: $\frac{ab}{(c+d)}$ where $a = 2.1$, $b = -3.4$, $c = -1.3$

Simplify completely:

a) $\frac{7.5 \cdot 7.1 - 19.5}{0.54}$

b) $\frac{-5.6 - 7.5}{-5.05 - 1.5}$

c) $\frac{6.5(-1.6) - 3.35}{-2.75}$

d) If $a = -5.8$, $b = 10.37$, $c = 4.8$ and $d = 5.64$, evaluate and simplify the following expression:

$$\frac{a-b}{c-d}$$