

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## DIVIDING DECIMALS

### N-GEN MATH<sup>®</sup> 6



In the last lesson, we learned how to use the standard long division algorithm to find quotients that had decimals in them. Today, we will learn how to use this technique to divide a decimal by another decimal. But, first a warm up problem.

**Exercise #1:** Although in the last lesson, we only divided whole numbers by whole numbers, let's start by dividing decimals by whole numbers. Find each of the following quotients. They will all terminate.

(a)  $3\overline{)20.1}$

(b)  $6\overline{)43.5}$

(c)  $8\overline{)72.96}$

In order to understand how to divide a decimal by another decimal, first we review a basic idea about dividing fractions.

**Exercise #2:** Find each of the following quotients without changing it into a multiplication problem. Show how you found your answer.

(a)  $\frac{12}{10} \div \frac{3}{10}$

(b)  $\frac{28}{100} \div \frac{7}{100}$

**Recall:** If two fractions have the same denominator, to divide them you need to only divide the numerators.

**Exercise #3:** Now consider the problem  $0.35 \div 0.07$  or  $0.07\overline{)0.35}$

(a) Change this problem into a division problem involving fractions with denominators of 100. Find the quotient.

(b) Rewrite  $0.07\overline{)0.35}$  using only whole numbers based on (a). What did you do to both decimals in order to rewrite it?



## STANDARD METHOD FOR DIVIDING DECIMALS

When dividing two decimals, move the decimal place of both the divisor and the dividend to the right the same number of places **until the divisor is a whole number**.

**Exercise #4:** Find each of the following quotients by rewriting using the standard method. Some will be whole numbers and some will be terminating decimals.

(a)  $0.2 \overline{)11.4}$

(b)  $0.32 \overline{)1.92}$

(c)  $0.7 \overline{)5.74}$

(d)  $1.2 \overline{)0.81}$

(e)  $0.28 \overline{)2.044}$

(f)  $0.375 \overline{)19.5}$

**Exercise #5:** Jenna has created 18 milliliters of perfume that she is dividing into bottles that contain 1.75 milliliters each. How many total bottles will she be able to fill? Show the work that leads to your answer.



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**DIVIDING DECIMALS**  
**N-GEN MATH<sup>®</sup> 6 HOMEWORK**

**FLUENCY**

1. Find each of the following quotients where a decimal has been divided by a whole number.

(a)  $4 \overline{)29.6}$

(b)  $16 \overline{)40.8}$

(c)  $3 \overline{)19.41}$

2. Find each of the following quotients by using the standard method. Show how you rewrote the divisor and the dividend.

(a)  $0.07 \overline{)3.64}$

(b)  $1.5 \overline{)34.8}$

(c)  $0.008 \overline{)1}$

(d)  $0.05 \overline{)12.72}$

(e)  $0.18 \overline{)11.376}$

(f)  $0.125 \overline{)1.56}$



## USING YOUR MATH

3. Frank has \$32.58 he wants to give to his three grandchildren. If he divides the \$32.58 evenly between the three, how much money does each grandchild receive? Show your work.
4. Maria is filling her 28-liter tank with glasses that hold 1.75 liters each. How many glasses will she have to pour in to totally fill the tank if she uses full glasses? Show your work.
5. If 7 pounds of flour is divided into piles that are 0.35 pounds each, how many piles are made? Show the work that leads to your answer.

## REVIEWING YOUR MATH

6. Find each of the following products. Show the work that leads to your answer.

$$\begin{array}{r} 2.45 \\ \text{(a) } \times 1.7 \\ \hline \end{array}$$

$$\begin{array}{r} 32.7 \\ \text{(b) } \times 20.4 \\ \hline \end{array}$$

