Name: _____ Date: _____

DIVISION WITH DECIMALS
N-GEN MATH® 7

Division involving decimals or that results in a decimal answer is commonplace in math. Let's first review some basics about decimals.

***Exercise* #1:** Place each of the following decimals in fraction form using a denominator that is a power of 10. Do not simplify.

(a) $0.2 =$ (b) $1.9 =$ (c) $0.37 =$ (d) $2.98 =$

Let's first review the division of two whole numbers that results in a quotient with a decimal.

***Exercise* #2:** When Nora stopped at Burger to Go, she spent $42 on 8 hamburgers that each cost the same amount.

(a) Evaluate the following quotient to find out how much each burger cost.

$8\overline{)\,42.00}$

(b) Check your answer from (a) by using a product.

***Exercise* #3:** Find each of the following quotients. Each decimal will terminate.

(a) $6\overline{)\,213}$ (b) $8\overline{)\,25.6}$ (c) $16\overline{)\,284}$

(d) Check your answer to (c) using a product.

Now we consider how to divide by a decimal. The next exercise reviews the process we use and why it works.

***Exercise* #4:** Consider the division problem: $29.6 \div 0.8$.

(a) Rewrite this as the division of two fractions. Evaluate this quotient.

(b) Now, use the standard algorithm of "moving the decimal point" to perform the division.

$$0.8\overline{)29.6}$$

Fluency involving decimal division is important for future work.

***Exercise* #5:** Find each of the following quotients. Each answer will either result in a whole number or a terminating decimal.

(a) $1.2\overline{)31.2}$ (b) $0.4\overline{)3.56}$ (c) $2.84\overline{)10.508}$

***Exercise* #6:** Demarco is trying to determine how many pennies he has without having to count them. He first weighs 20 pennies and finds they have a total weight of 54 grams. He then weighs all the pennies and finds they weigh a total of 918 grams.

(a) Determine how much a single penny weighs, i.e. the **grams per penny**.

(b) Use your answer from (a) to determine how many pennies Demarco has.

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DIVISION WITH DECIMALS
N-GEN MATH® 7 HOMEWORK

FLUENCY

1. Find each of the following quotients. Each will have a terminating decimal.

(a) $5\overline{)49}$ (b) $12\overline{)81}$ (c) $35\overline{)217}$

(d) $4\overline{)14.24}$ (e) $12\overline{)91.56}$ (f) $254\overline{)596.9}$

2. Find each of the following quotients by using the standard algorithm of moving the decimal.

(a) $0.2\overline{)8.4}$ (b) $1.5\overline{)93}$ (c) $0.7\overline{)4.76}$

(d) $0.52\overline{)3.328}$ (e) $0.015\overline{)1.26}$ (f) $1.35\overline{)51.84}$

USING YOUR MATH

3. Laura spent \$30.32 on 8 gallons of gasoline. Which of the following was the price of the gasoline that Laura bought?

   (1) \$3.29 per gallon (3) \$3.64 per gallon

   (2) \$3.42 per gallon (4) \$3.79 per gallon _____

4. Ava is trying to determine how much a delivery of 70 gallons of water will weigh. She knows that five gallons of water weigh 41.7 pounds.

   (a) Determine how much a single gallon of water weighs, i.e. the **pounds per gallon**.

   (b) Using your answer from (a), determine how many pounds 70 gallons of water will weigh. Round your final answer to the nearest pound.

5. Aiden figured out that a nickel weighs 3.2 grams. Aiden weighs a collection of nickels and finds their total weight to be 185.6 grams.

   (a) How many nickels does Aiden have?

   (b) How much money does Aiden have in nickels?

THINK ABOUT YOUR MATH

6. Find each of the following quotients. After moving the decimal they should be easy!

   (a) $0.1\overline{)5}$ (b) $0.01\overline{)5}$ (c) $0.001\overline{)5}$ (d) $0.0001\overline{)5}$

7. What happened to the quotients in #6 when we divided 5 by smaller and smaller numbers?