

Name: _____

Date: _____

MULTIPLICATION
N-GEN MATH® 7



Multiplication is an extremely important process in math and becomes even more so as you progress. Understanding it and being fluent in its various forms is critical.

Exercise #1: Samantha is buying 5 burgers that cost \$7.25 per burger.

- (a) Write and evaluate a product that finds out how much Samantha pays in total.
- (b) Many times, in an applied problem, one of the parts of the product is a rate. Which part in this product is a rate?

Exercise #2: Jenna is carrying a bucket that holds 2.5 gallons of water. Water weighs 8.34 pounds per gallon and the bucket itself weights three-quarters of a pound. What is the total combined weight of the water and bucket that Jenna is carrying? Show the work that leads to your answer.

Multiplication has an immensely important property known as the **commutative property of multiplication**. You already know and use this property all the time.

Exercise #3: Ethan has 8 bags that contain 3 marbles per bag and his friend Emelia has 3 bags that contain 8 marbles per bag. Who has more marbles, Ethan or Emelia? Explain your choice.



The **commutative property of multiplication** says that when you find the **product** of two numbers, the order of the numbers in the product does not matter. Let's look at another important property of multiplication known as the **associative property of multiplication**.

Exercise #4: Find the product $3 \times 2 \times 5$ in two ways:

(a) $(3 \times 2) \times 5$

(b) $3 \times (2 \times 5)$

(c) Did the order of finding the product matter?

(d) Find the following product by rearranging its factors using the commutative and associative properties of multiplication. Show how you rearrange it.

$$5 \times 4 \times 7 \times 2$$

We will need to be able to multiply whole numbers, decimals, and fractions in this course. Let's review the multiplication of fractions next.

Exercise #5: Find each of the following products of whole numbers with fractions. In each case, your result will be a whole number. Take note of the different ways to show multiplication.

(a) $\frac{2}{3} \times 18$

(b) $\frac{5}{7} \cdot 63$

(c) $\frac{7}{8}(32)$

Exercise #6: Find each of the following products. Express your answers in simplest form. You may leave improper fractions.

(a) $\frac{3}{4} \times \frac{7}{6}$

(b) $\frac{12}{5} \cdot \frac{15}{8}$

(c) $\left(\frac{3}{20}\right)\left(\frac{5}{6}\right)$



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MULTIPLICATION
N-GEN MATH[®] 7 HOMEWORK

FLUENCY

1. Find each of the following products. Show your work.

(a) 57×23

(b) $724 \cdot 82$

(c) $(345)(210)$

2. Find each of the following products involving decimals. Show your work.

(a) 5.6×0.7

(b) $6 \cdot 12.73$

(c) $(0.35)(0.82)$

3. Find the following products of whole numbers and fractions. Your results will be whole numbers.

(a) $\frac{5}{8} \times 48$

(b) $\frac{3}{2} \cdot 50$

(c) $\frac{7}{12}(36)$

4. Find each of the following products of fractions. Write your answers in simplest form. You may leave improper fractions as answers.

(a) $\frac{8}{3} \times \frac{5}{6}$

(b) $\frac{9}{4} \cdot \frac{2}{3}$

(c) $\left(\frac{3}{8}\right)\left(\frac{4}{15}\right)$



5. Darius is finding the following product: $7 \times 5 \times 8 \times 10 \times 2$. He follows the steps shown below. Beside each step **with a blank** write whether Darius has used the **commutative** property of multiplication or the **associative** property of multiplication.

$$7 \times 5 \times 8 \times 10 \times 2$$

$$7 \times 8 \times 5 \times 2 \times 10 \quad \underline{\hspace{10em}}$$

$$(7 \times 8) \times (5 \times 2) \times 10 \quad \underline{\hspace{10em}}$$

$$56 \times 10 \times 10$$

$$56 \times (10 \times 10) \quad \underline{\hspace{10em}}$$

$$56 \times 100 = 5,600$$

USING YOUR MATH

6. Mia is filling her gas tank with gasoline that costs \$3.25 per gallon. If she puts 4.2 gallons of gasoline into the tank, how much will she pay? Show your work.
7. Three-fifths of all people in a room have cellphones. If there are 35 people in the room, how many have cellphones?
8. A snail is traveling at a rate of 0.64 centimeters each second. How many centimeters will the snail move in 3 seconds?
9. If a recipe calls for three-quarters of a cup of sugar but Kate only wants to make half of the recipe, how much sugar will she need?

