

# TOPIC 1-1: Add, Subtract, and Multiply Decimals

## Steps for adding and subtracting with decimals

**Step 1:** \_\_\_\_\_ the decimals! First number goes on top.

**Step 2:** \_\_\_\_\_ zeroes so each place has a digit.

**Step 3:** Solve normally and bring the decimal \_\_\_\_\_.

### Examples:

$54.7 + 21.4$

$14.3 + 23.5$

$9.543 - 3.671$

$\$50.62 - \$39.81$

$15 + 6.32$

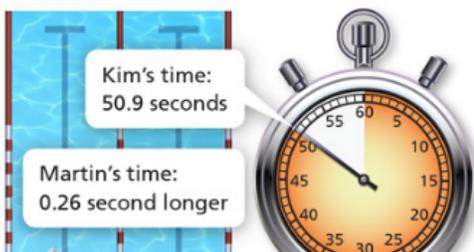
$17 - 12.7$

Kim and Martin swam 50 meters. Martin took 0.26 second longer than Kim. What was Martin's time in the race?

### **Use Patterns and Structure**

Why is precision important when working with decimals?

Hayden ran a race in 20.7 seconds. Riley finished the race 0.258 second before Hayden. How long did it take Riley to run the race?



## Steps for multiplying with decimals

**PRODUCT:** answer to a multiplication problem

**Step 1:** Write the multiplication problem vertically. The number with \_\_\_\_\_ digits should be on \_\_\_\_\_.

**Step 2:** \_\_\_\_\_ normally!

**Step 3:** Count how many numbers are \_\_\_\_\_ the decimal point of each number in the problem. The answer must have the \_\_\_\_\_ amount of numbers after the decimal.

Examples:

$4 * 0.83$

$3 * 14.2$

$4.12 * 0.05$

$5.7 * 2.8$

- Use the information in the table to solve each problem.

6.NS0.2.3

### PART A

What is the combined length in kilometers of the Bayshore Loop, Snake Bight, and Rowdy Bend trails?

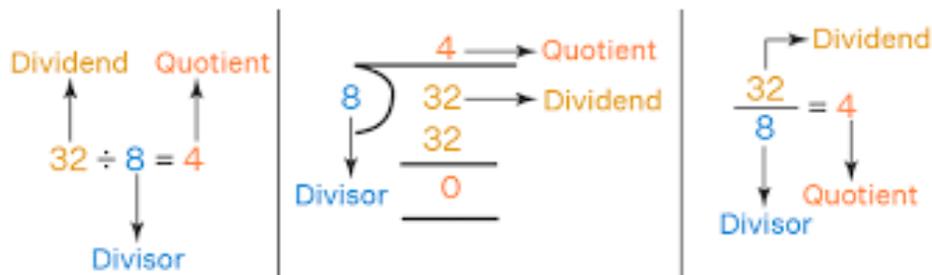
### PART B

The Coastal Prairie trail is 2.42 times as long as the Eco Pond and Rowdy Bend trails combined. What is the length of the Coastal Prairie trail?

**Trails in Everglades National Park**

Trail	Length (kilometers)
Bayshore Loop	3.2
Eco Pond	0.8
Rowdy Bend	4.2
Snake Bight	2.6

## TOPIC 1-2: Divide Whole Numbers and Decimals



**DIVIDEND:** the number being divided

If dividing a **decimal** by a **whole number**:

**Step 1:** Divide as with whole numbers

**Step 2:** Place the decimal in the quotient \_\_\_\_\_ its  
place in the dividend.

Examples:

$$7.7 \div 14$$

$$9.48 \div 15$$

$$\$54.18 \div 6$$

$$9.8 / 2$$

If dividing a **decimal or whole number** by a **decimal**:

**Step 1:** Change the divisor into a \_\_\_\_\_ by multiplying both divisor and dividend by the same power of 10. (Move the decimal to the \_\_\_\_\_ to make a whole number on the outside and then move the decimal the \_\_\_\_\_ on the inside.)

**Step 2:** Divide. \_\_\_\_\_ zeroes if needed. No more remainders!

**Step 3:** Put the decimal straight up into the \_\_\_\_\_

Examples:

$$1.71 \div 0.9$$

$$2.64 \div 0.6$$

$$54.4 \div 1.7$$

$$8.424 \div 0.36$$

$$180 \div 8$$

$$0.2430 \div 0.6$$

## Word Problems

Kendra has 5.5 pounds of popcorn and wants to package it equally in 50 bags. How many pounds of popcorn will be in each bag?

You and a friend are paid \$38.25 for doing yard work. You worked 2.5 hours and your friend worked 2 hours. You split the money according to the amount of time each of you worked. How much is your share of the work?

**Communicate and Justify** Bailey divided 0.80 by 20 as shown. Is the work correct? If not, explain why not and give a correct response.

$$\begin{array}{r} 0.40 \\ 20 \overline{)0.80} \\ \underline{-80} \\ 0 \end{array}$$

34. Which brand of fruit snacks costs less per pound? How much less?



Fruit Snacks	
Brand A	Brand B
15 lb	25 lb
\$16.20	\$22.25

## TOPIC 1-3: Multiply Fractions

When multiplying a **fraction** and a **whole number**:

**Step 1:** Make the whole number a \_\_\_\_\_ by putting a \_\_\_\_\_ under it. Give it a \_\_\_\_\_ and \_\_\_\_\_!

**Step 2:** Multiply the \_\_\_\_\_ and then multiply the \_\_\_\_\_ straight \_\_\_\_\_.

$$2 \times \frac{2}{5}$$

$$9 \times \frac{1}{3}$$

$$\frac{2}{5} \times 4$$

$$\frac{1}{2} \times 3$$

$$\frac{3}{4} \times 5$$

$$6 \times \frac{2}{3}$$

A sloth spends  $\frac{4}{5}$  of its life asleep. If the sloth lives to be 28 years old, how many years does it spend asleep?

When multiplying a **fraction** by a **fraction**, multiply the \_\_\_\_\_ and \_\_\_\_\_ straight across.

a.  $\frac{1}{2} \times \frac{3}{5}$

b.  $\frac{1}{3} \times \frac{3}{4}$

c.  $\frac{2}{3} \times \frac{5}{6}$

Tina has  $\frac{1}{2}$  of a pan of cornbread left from a dinner party. She eats  $\frac{1}{2}$  of the leftover part the next night. How much of the whole pan does Tina eat? Write and solve an equation.

When multiplying **mixed numbers**:

**Step 1:** Change the mixed number to an \_\_\_\_\_ .

**Step 2:** Multiply the numerators and denominators straight across.

**Step 3:** Simplify.

$$2\frac{1}{2} \times \frac{1}{4}$$

$$\frac{1}{3} \times 1\frac{3}{4}$$

$$5\frac{1}{2} \times \frac{1}{3}$$

$$4\frac{1}{2} \times 2\frac{2}{3}$$

A clothing factory makes T-shirts. If each machine makes  $3\frac{1}{3}$  T-shirts per hour, how many T-shirts does one machine make in  $4\frac{1}{2}$  hours? Write and solve an equation.

TOPIC 1-4: Understand Division with Fractions

Use pgs 37-39 in text

# TOPIC 1-5: Divide Fractions

RECIPROCAL: \_\_\_\_\_ the fraction upside down. Two numbers are reciprocals if their product is one.

Ex: What is the reciprocal of:

a.  $\frac{3}{5}$

b.  $\frac{1}{3}$

c. 11

When dividing **fractions**, you have to \_\_\_\_\_, \_\_\_\_\_,  
\_\_\_\_\_.

**Step 1:** Make any whole number a \_\_\_\_\_ by putting a \_\_\_\_\_  
under it.

**Step 2:** Rewrite the problem with \_\_\_\_\_, \_\_\_\_\_,  
\_\_\_\_\_.

\_\_\_\_\_ the first fraction exactly the same.

\_\_\_\_\_ division to multiplication

\_\_\_\_\_ the second fraction (write its \_\_\_\_\_)

**Step 3:** Multiply the numerators and denominators straight across.

**Step 4:** Simplify.

d.  $6 \div \frac{1}{3}$

e.  $5 \div \frac{2}{3}$

f.  $4 \div \frac{3}{4}$

a.  $\frac{1}{4} \div \frac{3}{8}$

b.  $\frac{2}{3} \div \frac{3}{8}$

c.  $\frac{5}{6} \div \frac{1}{3}$

e.  $\frac{8}{9} \div 4$

f.  $\frac{4}{5} \div 8$

g.  $\frac{12}{13} \div 4$

**Choose Efficient Methods** A large bag contains  $\frac{12}{15}$  pound of granola. How many  $\frac{1}{3}$ -pound bags can be filled with this amount of granola? How much granola is left over?



## TOPIC 1-6: Divide Mixed Numbers

First, let's remember how to convert mixed numbers and improper fractions.

$$2\frac{3}{8}$$

$$5\frac{5}{8}$$

$$2\frac{1}{2}$$

$$\frac{8}{5}$$

$$\frac{95}{6}$$

**Step 1:** Convert mixed numbers to \_\_\_\_\_.

**Step 2:** Rewrite the problem with \_\_\_\_\_, \_\_\_\_\_,  
\_\_\_\_\_.

**Step 3:** Multiply the numerators and denominators straight across.

**Step 4:** Simplify.

**a.**  $2\frac{3}{8} \div \frac{1}{4}$

**b.**  $2\frac{1}{2} \div \frac{3}{7}$

**c.**  $5\frac{5}{8} \div \frac{3}{4}$

Kayla drives her new car to work every day. It uses  $1\frac{3}{5}$  gallons of gas for each round trip. How many round trips to work can Kayla drive on a full tank of gas?



**Car Specifications**

**TRANSMISSION** 6-speed manual

**FUEL ECONOMY** 24 mpg city/32 mpg hwy

**FUEL CAPACITY** 16 gal

4 cylinders

all-wheel drive

Damon has  $37\frac{1}{2}$  inches of space on his car bumper that he wants to use for bumper stickers. How many short bumper stickers can Damon fit side by side on his car bumper?



$37\frac{1}{2}$  inches



**GO GREEN GO** Long = 15 inches

**I ♥ ROBOTS** Medium =  $10\frac{3}{4}$  inches

**MADE IN USA** Short =  $6\frac{1}{4}$  inches

## TOPIC 1-7: Solve Problems with Rational Numbers

Look back at your notes to work through these problems!

Jenna feeds her cat twice a day. She gives her cat  $\frac{3}{4}$  can of cat food each time. Jenna is having a friend take care of her cat for 5 days. To prepare, she bought 8 cans of cat food. Did Jenna buy enough cat food?



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Devon records 4 hours of reality shows on her DVR. She records comedy shows for  $\frac{3}{8}$  of that amount of time. Devon watches all the reality and comedy shows in half-hour sittings.

- Find the number of hours of comedy shows that Devon records.
- Find the total number of hours of reality and comedy shows that Devon records.
- Find the number of half-hour sittings needed to watch all the shows.

6. You buy 3.17 pounds of apples, 1.25 pounds of pears, and 2.56 pounds of oranges. What is your total bill rounded to the nearest cent?



7. A student pays for 8.9 pounds of apples with a \$10 bill. How much change does the

8. A customer pays \$3.27 for oranges and \$4.76 for pears. How many pounds of fruit does the