

# Hand Back Test

## Adding Example

$$\frac{4}{5} + 3\frac{1}{2}$$

$$\frac{4}{5} + \frac{7}{2}$$

$$\frac{8}{10} + \frac{35}{10}$$

$$\boxed{\frac{43}{10}}$$

Foundations of Algebra  
 Day 5: Adding & Subtracting Fractions

Unit 1: Number Sense & Quantity

Practice

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

Practice Assignment

0 25 50 75 100

1. Add or subtract the following fractions.

a.  $\frac{2}{3} + \frac{2}{7}$   
 $\frac{14}{21} + \frac{6}{21}$

$\frac{20}{21}$

b.  $\frac{5}{7} + \frac{1}{2}$   
 $\frac{10}{14} + \frac{7}{14}$

$\frac{17}{14}$

c.  $\frac{3}{4} - \frac{2}{7}$   
 $\frac{21}{28} - \frac{8}{28}$

$\frac{13}{28}$

d.  $\frac{5}{6} - \frac{1}{4}$   
 $\frac{10}{12} - \frac{3}{12}$

$\frac{7}{12}$

2. Nadia spent  $\frac{1}{4}$  of her money on a shirt and  $\frac{2}{5}$  of her money on new shoes. What fraction of Nadia's money was spent? What fraction of her money is left?

$\frac{1}{4} + \frac{2}{5} = \frac{5}{20} + \frac{8}{20} = \frac{13}{20}$  spent  
 $\frac{7}{20}$  left

3. Carlos wants to practice piano 2 hours each day. He practices piano for  $\frac{3}{4}$  hour before school and  $\frac{7}{10}$  hour when he gets home. How many hours has Carlos practiced piano? How much longer does he need to practice before going to bed in order to meet his goal?

4. Mr. Kelly used  $\frac{5}{8}$  of a tank of gas on a trip to visit relatives for the weekend and another one half of a tank commuting to work the next week. He then took another weekend trip and used  $\frac{1}{4}$  tank of gas. How many tanks of gas did Mr. Kelly use altogether?

5. Add or subtract the following fractions.

a.  $3\frac{1}{4} + 3\frac{5}{8}$

$3\frac{13}{8} + 3\frac{29}{8}$

$\frac{26}{8} + \frac{29}{8}$

$6\frac{55}{8}$

b.  $5\frac{2}{7} - 4\frac{2}{3}$

$5\frac{37}{21} - 4\frac{14}{21}$

$\frac{111}{21} - \frac{98}{21}$

$\frac{13}{21}$

c.  $5\frac{1}{2} - 1\frac{3}{4}$

d.  $4\frac{2}{3} + 6\frac{1}{5}$



# Today's Notes

## Day 8: Multiplying & Dividing Fractions

**Discover:** Using the fraction models, try and multiply two fractions together and see if you can visually understand what the product equals. Write a number sentence and draw a sketch of what you see. Do this several times.

**Example:**  $\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$

**Example:**  $\frac{3}{4} \times \frac{1}{3} = \frac{1}{4}$

**Explore:** We are going to use visual pictures to model how to multiply fractions.

**Scenario:** You are going to be buying extra-large rectangular pizzas to sell at the home football games. Each pizza will cost \$24, but customers can buy part or all of a pizza.

a. Gage bought  $\frac{1}{4}$  of  $\frac{1}{2}$  of a pizza. How much pizza did he buy and how much did he pay?

$\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ 

double shaded  
total #

b. Tyler bought  $\frac{2}{3}$  of  $\frac{1}{4}$  of a pizza. How much pizza did he buy and how much did he pay?

$\frac{2}{3} \times \frac{1}{4} = \frac{2}{12} = \frac{1}{6}$ 

↑  
answer

c. Tyler bought  $\frac{2}{3}$  of  $\frac{1}{2}$  of a pizza. How much pizza did he buy and how much did he pay?

$\frac{2}{3} \times \frac{1}{2} = \frac{2}{6} = \frac{1}{3}$ 

↑  
answer

Foundations of Algebra

Unit 1: Number Sense &amp; Quantity

Notes

d. What patterns did you notice when modeling multiplication of fractions?

e. Maddy noticed that when she multiplies two fractions, the product is less than each of the fractions multiplied. Jackson doesn't think this is correct because he remembers from middle school that when you multiply two numbers, their product is supposed to be bigger. How can you help Jackson correct his thinking?

Describe how you multiply two fractions:

multiply the numerator

multiply the denominator

Simplify

Practice: Multiply the following fractions. Make sure your fractions are simplified.

$$a. \frac{1}{6} \times \frac{2}{3} = \frac{2}{18}$$

$$= \frac{1}{9}$$

$$b. \frac{1}{2} \times \frac{5}{6} = \frac{5}{12}$$

$$c. \frac{3}{5} \times \frac{4}{7} = \frac{12}{35}$$

$$d. \frac{1}{12} \times \frac{3}{4} = \frac{3}{48}$$

$$= \frac{1}{16}$$

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

$$\frac{5}{2} \times \frac{7}{4} = \frac{35}{8}$$

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

$$\frac{4}{3} \times \frac{12}{5} = \frac{48}{15}$$

$$= \frac{16}{5}$$

$$g. \frac{1}{6} \times 6$$

$$\frac{1}{6} \times \frac{6}{1} = \frac{6}{6}$$

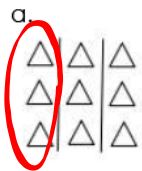
$$= 1$$

$$h. 3 \times \frac{1}{3}$$

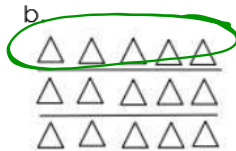
$$\frac{3}{1} \times \frac{1}{3} = \frac{3}{3}$$

$$= 1$$

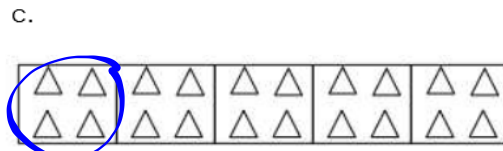
Multiplication of Fractions within a Context



$\frac{1}{3}$  of 9 = 3  
 $\frac{2}{3}$  of 9 = 6  
 $\frac{3}{3}$  of 9 = 9



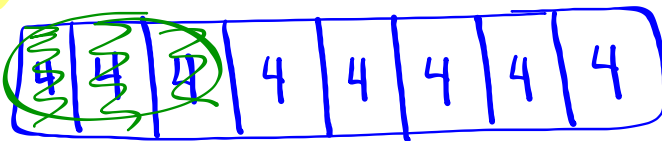
$\frac{1}{3}$  of 15 = 5  
 $\frac{2}{3}$  of 15 = 10  
 $\frac{3}{3}$  of 15 = 15



$\frac{1}{5}$  of 20 = 4  
 $\frac{4}{5}$  of 20 = 16  
 $\frac{5}{5}$  of 20 = 20

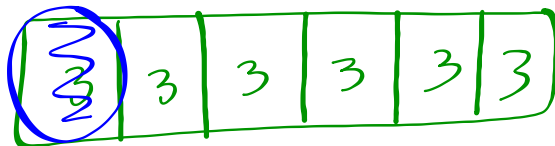
d. There are 32 students in a class. Of the class,  $\frac{3}{8}$  of the students bring their own lunches. How many students bring their lunch?

$\frac{3}{8}$  # of shaded sections



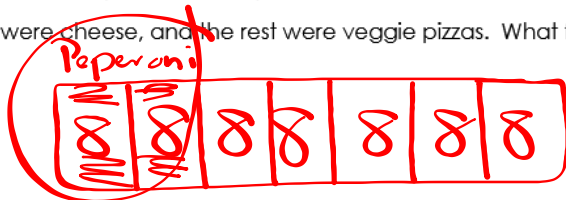
12 student bring lunch

e. Jack collected 18 ten dollar bills while selling tickets for a show. He gave  $\frac{1}{6}$  of the bills to the theater and kept the rest. How much money did he keep?



He kept 15 \$10 bills

f. Ms. Phillips ordered 56 pizzas for a school fundraiser. Of the pizzas ordered,  $\frac{2}{7}$  of them were pepperoni, 19 were cheese, and the rest were veggie pizzas. What fraction of the pizzas were veggie?



16 pep  
 19 cheese  
 ---  
 35

56  
 - 35  
 ---  
 21 veggie

g. Terrence finished a word search in  $\frac{3}{4}$  the time it took Frank. Charlotte finished the word search in  $\frac{2}{3}$  the time it took Terrence. Frank finished the word search in 32 minutes. How long did it take Charlotte to finish the word search?



# Additional Practice

Foundations of Algebra  
Day 6: Multiplying Fractions

Unit 1: Number Sense & Quantity

Practice

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

Practice Assignment

0 25 50 75 100

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1. Multiply the following fractions:

a.  $\frac{1}{8} \times \frac{2}{3}$

b.  $\frac{3}{5} \times \frac{10}{11}$

c.  $\frac{8}{9} \times \frac{3}{4}$

d.  $\frac{7}{10} \times \frac{2}{5}$

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

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

g.  $\frac{1}{2} \times 2\frac{1}{8}$

h.  $5 \times \frac{1}{5}$

2. Sara just turned 18 years old. She spent  $\frac{4}{9}$  of her life living in Atlanta, GA. How many years did Sara live in Atlanta? Draw a picture to model the scenario.

3. Tiffany buys 2 dozen roses. Of these roses,  $\frac{3}{4}$  are red, and the rest are white. How many white roses did she buy? Draw a picture to model the scenario.

Foundations of Algebra

Unit 1: Number Sense &amp; Quantity

Practice

4.  $\frac{2}{3}$  of a number is 8. What is the number? Draw a picture to model the scenario.

5. Tiffany spent  $\frac{4}{7}$  of her money on a teddy bear. If the teddy bear costs \$24, how much money did she have at first? Draw a picture to model the scenario.

6. A skating rink sold 44 children's tickets, which represented  $\frac{2}{3}$  of the total number of tickets sold. How many total tickets were sold?

7. My grandparents spent  $\frac{3}{4}$  of the year living in Florida. How many months do they spend in Florida?