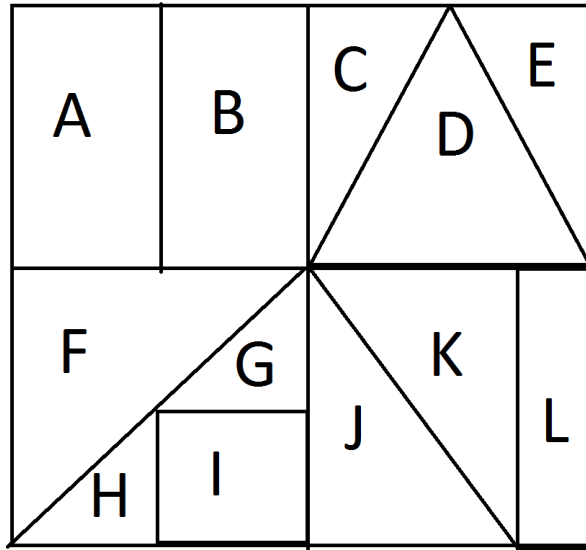


WINTER BREAK ASSIGNMENT - FRACTIONS**Question 1 – Ordering Fractions**

This square has been divided into 12 pieces. What fraction of the whole square is each piece?
Order the fractions from least to greatest.



Questions 2 – Adding Fractions

Recall: To add fractions, you must find a common denominator then add the numerator.

$$\begin{array}{ccc} & \times 2 & \\ & \curvearrowright & \\ \frac{5}{6} & = & \frac{10}{12} \\ & \curvearrowleft & \\ & \times 2 & \end{array}$$

Example: Add the following fraction $\frac{4}{9} + \frac{1}{3}$

Step 1: Find the common denominator

$$\begin{array}{ccc} & \times 3 & \\ & \curvearrowright & \\ \frac{1}{3} & = & \frac{3}{9} \\ & \curvearrowleft & \\ & \times 3 & \end{array}$$

Step 2: Add the numerators

$$\frac{4}{9} + \frac{3}{9} = \frac{4+3}{9} = \frac{7}{9}$$

Questions:

1. a) $\frac{1}{2} + \frac{1}{3} =$

b) $\frac{3}{4} + \frac{1}{6} =$

c) $\frac{9}{4} + \frac{4}{9} =$

2. Damara and Baldwin had to shovel snow from their driveway.

Damara shoveled about $\frac{3}{10}$ of the driveway.

Baldwin shoveled about $\frac{2}{3}$ of the driveway.

About what fraction of the driveway was cleared of snow?

Questions 3 – Subtracting Fractions

Recall: To subtract fractions, you must find a common denominator then subtract the numerator.

$$\frac{5}{6} = \frac{10}{12}$$

Example: Add the following fraction $\frac{4}{9} - \frac{1}{3}$

Step 1: Find the common denominator

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

Step 2: Add the numerators

$$\frac{4}{9} - \frac{3}{9} = \frac{4-3}{9} = \frac{1}{9}$$

Questions:

1. a) $\frac{7}{2} - \frac{5}{4} =$

b) $\frac{7}{2} - \frac{2}{4} =$

c) $\frac{13}{6} - \frac{2}{5} =$

2. a) $3\frac{3}{4} - 1\frac{1}{5} =$

b) $3\frac{7}{10} - 2\frac{1}{3} =$

3. a) One-half of the books in Kelvin’s backpack are novels.
He also has 3 science books, 2 history books, and 1 geography book.
How many books are in Kevin’s backpack backpack?

- b) In Raji’s locker, one – third of the books are novels and one-third are science books.
She also has 2 geography books, 3 history book, and 1 social studies book.
How many books are in Raji’s locker?

Questions 4 – Multiplying Fractions

Recall: To multiply two fractions, multiply the numerators and multiply the denominators.

Example: Multiply the following fraction $\frac{4}{9} \times \frac{1}{3}$

$$\frac{4}{9} \times \frac{1}{3} = \frac{(4 \times 1)}{(9 \times 3)} = \frac{4}{27}$$

Questions:

1. a) $\frac{3}{8} \times \frac{5}{6} =$

b) $\frac{3}{5} \times \frac{2}{3} =$

c) $\frac{5}{4} \times \frac{11}{10} =$

2. The product of two fractions is $\frac{2}{3}$.
One fraction is $\frac{3}{5}$.
What is the other fraction?

3. Use your knowledge of exponents and multiplying fractions to evaluate each power.

a) $\left(\frac{2}{9}\right)^2 =$

b) $\left(\frac{3}{10}\right)^2 =$

c) $\left(\frac{5}{2}\right)^2 =$

4. Paula has $\frac{7}{8}$ of a tank of gas.

She estimates she will use $\frac{2}{3}$ of the gas to get home.

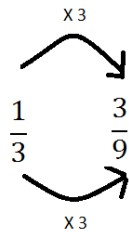
What fraction of a tank of gas does she use?

Questions 5 – Dividing Fractions

Method 1 – The Common Denominator Method: To divide fractions, find a common denominator and then divide the numerators.

Example: Divide the following fraction using the common denominator method: $\frac{4}{9} \div \frac{1}{3}$

Step 1: Find a common denominator.



Step 2: Divide the numerators.

$$\frac{4}{9} \div \frac{3}{9} = 4 \div 3 = 1\frac{1}{3}$$

Method 2 – The Multiplication Method: To divide fractions, flip the second fraction and then multiply the fractions.

Example: Divide the following fraction using the multiplication method: $\frac{4}{9} \div \frac{1}{3}$

Step 1: Flip the second

$$\frac{1}{3} \begin{array}{l} \curvearrowright \\ \curvearrowleft \end{array} \text{ Flip } \Rightarrow \frac{3}{1} \text{ fraction}$$

Step 2: Multiply the fractions

$$\frac{4}{9} \times \frac{3}{1} = \frac{4 \times 3}{(9 \times 1)} = \frac{12}{9}$$

Questions:

1. Solve the following fractions using the common denominator method

a) $\frac{8}{5} \div \frac{3}{4} =$

b) $\frac{3}{5} \div \frac{11}{10} =$

c) $1\frac{3}{8} \div 2\frac{1}{3} =$

2. Solve the following fractions using the multiplication method

a) $\frac{5}{3} \div \frac{3}{4} =$

b) $\frac{3}{5} \div \frac{4}{9} =$

c) $3\frac{3}{8} \div \frac{25}{2} =$