

Model Subtraction

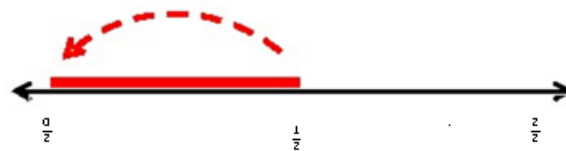
Number line can be used to subtract fractions.

Fractions that have the same denominator are called like fractions. When you have like fractions, you only need to subtract the numerators. The denominator stays the same.

Find the difference.

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

- The denominator is 2 so draw a number line and divide it into 2 equal parts.
- Begin at $\frac{1}{2}$.
- Subtract $\frac{1}{2}$ by counting back 1 part on the number line.



- You stopped on $\frac{0}{2}$, so 0 of the number line remains.
- That means $\frac{1}{2} - \frac{1}{2} = \frac{0}{2}$, or 0.

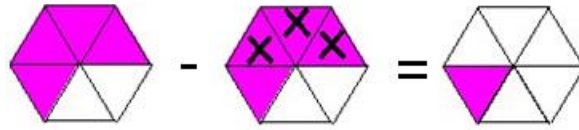
Before we can subtract any two or more fractions, first they must have the same (common) denominators.

When you subtract like fractions, subtract only the numerators.

$$\frac{a}{c} - \frac{b}{c} = \frac{a - b}{c}$$

If the difference is not in lowest terms, it must be reduced to lowest terms.

$$\frac{4}{6} - \frac{3}{6} = ?$$



$$\frac{\text{4 parts shaded}}{\text{6 parts}} - \frac{\text{3 parts shaded}}{\text{6 parts}} = \frac{\text{1 part shaded}}{\text{6 parts}}$$

$$\frac{4}{6} - \frac{3}{6} = \frac{1}{6} \rightarrow \text{subtract the numerators} \rightarrow$$

$$\frac{4}{6} - \frac{3}{6} = \frac{1}{6} \rightarrow \text{write the denominator} \rightarrow$$

$$\frac{4-3}{6} = \frac{1}{6}$$

Examples:

A- Model the difference. Record your answer.

1) $\frac{12}{9} - \frac{7}{9}$

$$\frac{12}{9} - \frac{7}{9} = \frac{12-7}{9} = \frac{5}{9}$$

2) $\frac{9}{3} - \frac{5}{3}$

$$\frac{9}{3} - \frac{5}{3} = \frac{9-5}{3} = \frac{4}{3}$$

3) $\frac{5}{8} - \frac{3}{8}$

$$\frac{5}{8} - \frac{3}{8} = \frac{5-3}{8} = \frac{2}{8} = \frac{1}{4}$$