TOPIC: ADDING AND SUBTRACTING LIKE FRACTIONS

Adding & Subtracting Like Fractions

◆ To + or − fractions with the *same* denominator, _____ the **numerators** & put over the **common denominator**.

Adding Fractions	Subtracting Fractions
$\frac{1}{5} + \frac{2}{5} =$ 	$\frac{4}{5} - \frac{3}{5} =$ 

EXAMPLE Add or subtract the fractions below and simplify if necessary.

New

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

(A) $\frac{5}{7x} - \frac{1}{7x}$

(B) $\frac{-3}{8} - \frac{5}{8} + \frac{2}{8}$

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PRACTICE Add the following fractions and express the answer in its simplest form.

(***A***) $\frac{3}{8}+\frac{5}{8}$

(***B***) $\frac{7}{11}+\left(-\frac{2}{11}\right)$

(***C***) $\frac{7}{10}+\left(-\frac{2}{10}\right)+\frac{4}{10}$

PRACTICE Add or subtract as indicated and express each answer in simplest form.

(***A***) $\frac{2}{8x}-\frac{1}{8x}$

(***B***) $\frac{5}{12y}-\left(-\frac{2}{12y}\right)+\frac{3}{12y}$

(***C***) $\frac{7}{10}-\frac{3}{10}+\frac{2}{10}-\frac{1}{10}$

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EXAMPLE If $x = \frac{5}{9}$ and $y = -\frac{4}{9}$, complete the operations below:

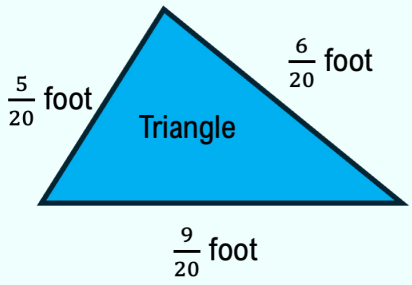
(A) $x + y$

(B) $x - y$

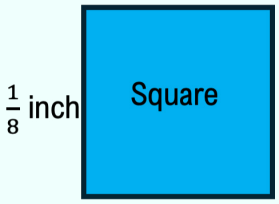
(C) $y - x$

EXAMPLE Find the perimeter for each of the shapes below.

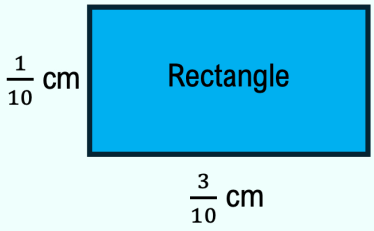
(A)



(B)



(C)



TOPIC: ADDING AND SUBTRACTING LIKE FRACTIONS

Adding & Subtracting Fractions with Variables

◆ Recall: Add & subtract fractions with the same denominator by combining numerators & keeping the denominator.

► If numerators have *variables*, identify and _____ **like terms** (ex: $x + 2x$).

Recall +/− without Variables	New +/− with Variables
$\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$	$\frac{x}{5} + \frac{2x}{5} = \text{—}$

◆ Recall: We *cannot* combine **unlike terms** (ex: $x + 2$).

EXAMPLE Add or subtract as indicated, then simplify your result.

(A) $\frac{3y}{8} - \frac{5}{8} =$

(B) $-\frac{10z}{6} + \frac{2z}{6} =$

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PRACTICE Complete the operations below and express the answer in its simplest form.

(***A***) $\frac{3x}{8}+\frac{2x}{8}-\frac{x}{8}$

(***B***) $\frac{5y}{12}-\left(-\frac{2y}{12}\right)+\frac{3y}{12}$

(***C***) $\frac{7}{10y}-\frac{3}{10y}$