Watch Out!

When you subtract a negative number, you add the opposite. If the number you are subtracting from is negative, the result can be positive, negative, or zero.

Example 4

Tutor

Evaluate $x - y$ when $x = \frac{3}{5}$ and $y = -\frac{4}{5}$.

To subtract a negative number, add its additive inverse.

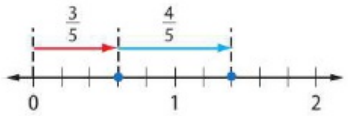
$x - y = \frac{3}{5} - \left(-\frac{4}{5}\right)$ Replace x with $\frac{3}{5}$ and y with $-\frac{4}{5}$.

$= \frac{3}{5} + \frac{4}{5}$ The additive inverse of $-\frac{4}{5}$ is $\frac{4}{5}$.

$= \frac{3+4}{5}$ The denominators are the same. Add the numerators.

$= \frac{7}{5}$ or $1\frac{2}{5}$ Simplify and rename as a mixed number.

Check Use a number line.



$\frac{3}{5} - \left(-\frac{4}{5}\right) = \frac{7}{5}$ or $1\frac{2}{5}$ ✓

Got It? Do these problems to find out.

Evaluate each expression if $a = \frac{3}{8}$, $b = -\frac{5}{8}$, and $c = \frac{7}{8}$.

4a. $a - b$ **4b.** $b - c$ **4c.** $c - a$

Example 5

Tutor

LaShaun has $5\frac{1}{8}$ yards of ribbon to border scrapbook pages. If she uses $1\frac{7}{8}$ yards on one page, how much ribbon is left?

Subtract the amount of ribbon she will use from the total amount of ribbon.

Estimate $5\frac{1}{8} - 1\frac{7}{8} \approx 5 - 2$ or 3 yards

$5\frac{1}{8} - 1\frac{7}{8} = 4\frac{9}{8} - 1\frac{7}{8}$ Rename $5\frac{1}{8}$ as $4\frac{9}{8}$.

$= 3\frac{2}{8}$ Subtract the whole numbers and then the fractions.

$= 3\frac{2}{8}$ or $3\frac{1}{4}$ Simplify.

LaShaun has $3\frac{1}{4}$ yards of ribbon remaining.

Check for Reasonableness $3\frac{1}{2} \approx 3$ ✓

$2\frac{2}{4} - \frac{3}{4}$

$\frac{3}{4}$

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

$2\frac{2}{4}$

$1 + 1 + \frac{2}{4} = 1 + \frac{4}{4} + \frac{2}{4} = 1\frac{6}{4}$ → $2\frac{2}{4} = 1\frac{6}{4}$

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

Got It? Do this problem to find out.

5. The Daytona International Speedway is one of the longest tracks used in NASCAR races. It is $2\frac{2}{4}$ miles long. Richmond International Speedway is $\frac{3}{4}$ mile long. How much longer is the Daytona Speedway than the Richmond Speedway?

$\frac{10}{4} - \frac{3}{4} = \frac{7}{4} = 1\frac{3}{4}$