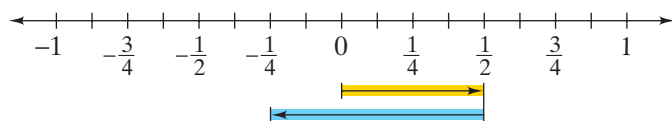


Modeling Addition and Subtraction of Rational Numbers

You already know how to use a number line to add and subtract integers. You also know how to add positive decimals, fractions, and mixed numbers. You can use these skills to add and subtract any rational numbers on a number line.

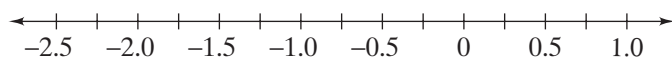
ACTIVITY

1. The sum $\frac{1}{2} + \left(-\frac{3}{4}\right)$ can be represented on a horizontal number line diagram.



Copy the number line diagram and label the parts that represent $\frac{1}{2}$ and $\left(-\frac{3}{4}\right)$.

2. What is the sum of these two fractions?
3. Can you use the same number line diagram to represent $\frac{1}{2} - \frac{3}{4}$?
4. Represent each sum or difference on a horizontal number line. Then find each sum or difference.
- a. $-\frac{3}{4} + \frac{5}{8}$ c. $\frac{3}{4} + \left(-\frac{1}{2}\right)$
- b. $\frac{1}{4} - \left(-\frac{3}{4}\right)$ d. $-\frac{1}{4} - \frac{5}{8}$
5. Use a horizontal number line like the one below to represent the sum of $-2.25 + 1.75$.



6. The vertical number line at the right represents $-0.5 - (-1.2)$.
- a. How else could you write this expression?
- b. What is the value of this expression?
7. Represent $-1\frac{1}{4} - 5\frac{1}{2}$ on a vertical number line diagram and find the difference.

