

Name: _____

Date: _____

Learning Goal 3.2

I can add and subtract rational numbers.

Rational Numbers () $\text{\textcircled{P}}$

A number that can be written as a fraction

Subtracting
Recall Adding integers:

a. $8 - 7$

$= 1$

b. $(-8) - 7$

$= -15$

c. $8 - (-7)$

$= 15$

d. $(-13) - (-9)$

$= -13 + 9$
 $= -4$

e. $(-14) - 5$

$= -19$

f. $2 - (-12)$

$= 2 + 12$
 $= 14$

Recall Adding decimals:

a. $8.5 - 7.2$
$$\begin{array}{r} 8.5 \\ -7.2 \\ \hline 1.3 \end{array}$$

b. $(-8.5) - 7.2 = -(8.5 + 7.2)$
 $= -15.7$
$$\begin{array}{r} 8.5 \\ +7.2 \\ \hline 15.7 \end{array}$$

c. $8.5 - (-7.2)$
 $= 15.7$

d. $(-10.3) - (-0.9)$
 $= -10.3 + 0.9$
 $= -9.4$

e. $(-21.4) - 5.6$
$$\begin{array}{r} 21.4 \\ +5.6 \\ \hline 27.0 \end{array}$$

 $= -27.0$

f. $2.2 - (-11.2)$
 $= 2.2 + 11.2$
 $= 13.4$

Subtracting

Finally Adding Fractions:

$$-\frac{1}{7} = -\frac{1}{7} = \frac{1}{-7} = \frac{-1}{7}$$

1. Proper and Improper, with the **same denominator**.

a. $\frac{2}{7} - \frac{3}{7}$

$$= \frac{2-3}{7} = -\frac{1}{7}$$

b. $(-\frac{2}{7}) - \frac{3}{7}$

$$= \frac{-2-3}{7} = -\frac{5}{7}$$

c. $\frac{2}{7} - (-\frac{3}{7})$

$$= \frac{2+3}{7} = \frac{5}{7}$$

d. $(-\frac{5}{6}) - (-\frac{11}{6}) = 1$

e. $(-2\frac{1}{2}) - \frac{3}{2} = -4$

f. $\frac{4}{3} - (-\frac{1}{3}) = \frac{5}{3}$

2. Proper and Improper, with **different denominators**.

a. $\frac{2}{5} - \frac{3}{2}$

$$= -\frac{11}{10}$$

b. $(-\frac{2}{5}) - \frac{3}{2}$

$$= -\frac{19}{10}$$

c. $\frac{2}{5} - (-\frac{3}{2})$

$$= \frac{19}{10}$$

d. $(-\frac{1}{6}) - (-2\frac{11}{12})$

$$= \frac{11}{4}$$

e. $(-\frac{1}{2}) - \frac{3}{7}$

$$= -\frac{13}{14}$$

f. $1\frac{4}{5} - (-\frac{3}{8})$

$$= \frac{87}{40}$$