

## 2.3 Subtracting Integers

**Goals:** ·Subtract positive and negative numbers

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1. Rewrite subtraction as \_\_\_\_\_ adding \_\_\_\_\_ the opposite.

2. Follow rules for \_\_\_\_\_ addition \_\_\_\_\_.

**Ex:**  $3 - 10$

$$\begin{array}{r} 3 + -10 \\ -7 \end{array}$$

**Ex:**  $-2 - 7$

$$\begin{array}{r} -2 + -7 \\ -9 \end{array}$$

**Ex:**  $9 - 26$

$$\begin{array}{r} 9 + -26 \\ -17 \end{array}$$

**Ex:**  $-4 - 12$

$$\begin{array}{r} -4 + -12 \\ -16 \end{array}$$

**Ex:**  $8 - 13$

$$\begin{array}{r} 8 + -13 \\ -5 \end{array}$$

**Ex:**  $-3 - 15$

$$\begin{array}{r} -3 + -15 \\ -18 \end{array}$$

1. Subtracting a negative is the same as \_\_\_\_\_ adding \_\_\_\_\_ a \_\_\_\_\_ positive \_\_\_\_\_.

2. Then following adding rules.

**Ex:**  $2 - (-7)$

$$\begin{array}{r} 2 + +9 \\ 11 \end{array}$$

**Ex:**  $-3 - (-4)$

$$\begin{array}{r} -3 + +4 \\ 1 \end{array}$$

**Ex:**  $4 - (-6)$

$$\begin{array}{r} 4 + +6 \\ 10 \end{array}$$

**Ex:**  $-15 - (-2)$

$$\begin{array}{r} -15 + +2 \\ -13 \end{array}$$

**Ex:**  $-1 - (-11)$

$$\begin{array}{r} -1 + +11 \\ 10 \end{array}$$

**Ex:**  $-5 - (-3)$

$$\begin{array}{r} -5 + +3 \\ -2 \end{array}$$

**\*Challenges\***

For each of the problems below begin by rewriting the problem but leaving blank spaces where the variables are.

Then substitute in the correct values.

Change subtraction to adding the opposite.

Follow addition rules.

**Ex:**  $x = -5, y = 3$

$$\begin{array}{r} y - x \\ 3 - (-5) \\ 3 + +5 \\ \hline 8 \end{array}$$

**Ex:**  $x = 4, y = 12$

$$\begin{array}{r} -y - (-x) \\ -12 - (-4) \\ -12 + +4 \\ \hline -8 \end{array}$$

**Ex:**  $x = 2, y = -3, z = -4$

$$\begin{array}{r} -z - x - y \\ -(-4) - 2 - (-3) \\ 4 - 2 + +3 \\ 2 + +3 \\ \hline 5 \end{array}$$

**Ex:**  $x = 10, y = 27.4$

$$x - y$$

$$\begin{array}{r} -10 \underline{\quad} - \underline{27.4} \underline{\quad} \\ 10 + -27.4 \\ \hline -17.4 \end{array}$$

**Ex:**  $r = 24.8, s = -32$

$$r - (-s)$$

$$\begin{array}{r} \underline{24.8} \underline{\quad} - (- \underline{-32}) \\ 24.8 - (+ 32) \\ 24.8 + -32 \\ \hline -7.2 \end{array}$$

**Ex:**  $-17 - (-x)$  when  $x = -2.4$

$$\begin{array}{r} -17 - (- -2.4) \\ -17 - (+2.4) \\ -17 + (-2.4) \\ \hline -19.4 \end{array}$$

**Ex:**  $r - y - x$

$$r = 2.5 \quad y = 17.2 \quad x = -12$$

$$\begin{array}{r} 2.5 - 17.2 - (-12) \\ 2.5 + -17.2 + +12 \\ -14.7 + 12 \\ \hline -2.7 \end{array}$$