

Objectives: I can solve problems by subtracting integers.

Subtracting Integers

Addition is the same as subtracting the opposite.

$$7 + (-4) = 3$$

$$7 - 4 = 3$$

$$8 + (-2) = 6$$

$$8 - 2 = 6$$

Let's not have to memorize a bunch of rules! Subtracting integers just requires you to add the opposite. Change the subtraction sign to addition; change the sign of the next number. (Never change the number before the subtraction sign.)

Examples:

| | | |
|------------------|-------------------|-----------------|
| $10 + (+4) =$ | $-6 +^{-}5 =$ | $3 +^{-}9 =$ |
| $10 + (+4) = 14$ | $-6 + (-5) = -11$ | $3 + (-9) = -6$ |

Practice Rewrite the subtraction problems below as addition problems, then solve.

| | | |
|-----------------------------------|----------------------------------|---------------------------------|
| 1) $-7 +^{-}3 =$ <u>-10</u> | 2) $12 +^{-}23 =$ <u>-11</u> | 3) $15 + (+3) =$ <u>18</u> |
| 4) $-28 + (+8) =$ <u>-20</u> | 5) $-2 +^{-}98 =$ <u>-100</u> | 6) $-63 + (+12) =$ <u>-51</u> |
| 7) $14 + (+9) =$ <u>23</u> | 8) $-4 +^{-}15 =$ <u>-19</u> | 9) $5 +^{-}8 + (+4) =$ <u>1</u> |
| 10) $-2 +^{-}5 + (+7) =$ <u>0</u> | \checkmark same Add $9 +^{-}8$ | |
| $-7 + 7$ | | |

Write a numerical expression for each situation and then simplify.

11) Terry has \$43 in a checking account. If Terry writes a check for \$62, what is the new account balance?

$$\begin{array}{r}
 56\cancel{2} \\
 -43 \\
 \hline
 19
 \end{array}
 \quad
 \underline{43 - 62 \text{ or } 43 +^{-}62 = -19}$$

12) Suppose you score 35 points in a game but then you get a 50 point penalty. What is your new score?

$$\underline{35 - 50 \text{ or } 35 +^{-}50 = -15}$$

Evaluate each expression if $m = -2$, $n = 3$, and $p = -6$.

13) $m - p$

$$-2 + +6 =$$

$$\boxed{4}$$

14) $p - n - m$

$$-6 +^{-}3 + +2 =$$

$$\boxed{-7}$$

15) $2n - m$

$$2 \cdot 3 + +2 =$$

$$6 + 2 =$$

$$\boxed{8}$$