

Do NowWrite the opposite of each integer.

1) 10 -10

2) -7 7

Find the difference.

3) $19 - (-12) \rightarrow 19 + 12$

31

4) $-16 - 20 \rightarrow -16 + (-20)$

-36

Write the opposite of each expression. \rightarrow Change all signs.

5) $12x - 5$ $-12x + 5$

6) $-3y - 4x + 3$ $3y + 4x - 3$

Lesson #47 - Subtracting ExpressionsUse the subtraction rule to find equivalent expressions.

To subtract one expression from another, use the subtraction rule ADD THE OPPOSITE.

Example 1) Find the difference of $(6c - 4)$ and $(2c - 3)$

$$(6c - 4) - (2c - 3)$$

$$(6c - 4) + (-2c) + 3$$

$$4c - 1$$

Example 2) Find the difference when $(-3n - 7)$ is subtracted from $(n + 4)$.

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

$$(n + 4) + 3n + 7$$

$$4n + 11$$

THINK ABOUT IT!
How would you write
4 subtracted from 9?



Now, You Try!

3) Find the difference.

$(13w + 2) - (11 + 5w)$

$$\begin{array}{r} (13w) + (2) - (11) - (5w) \\ \hline 18w - 9 \end{array}$$

4) Find the sum.

$2g + 9h - 5$ and $6g + 2$

$$\begin{array}{r} (2g + 9h - 5) + (6g + 2) \\ \hline 8g - 3 + 9h \end{array}$$

On Your Own. Add or Subtract the following.

5) $(3x^2 - x - 2) - (x^2 + 2x - 1)$

$$\begin{array}{r} (3x^2 - x - 2) + (-x^2 - 2x + 1) \\ \hline 2x^2 - 3x - 1 \end{array}$$

6) $x - (3x - 4)$

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

7) Subtract $2x$ from $7x$

$$7x - 2x = 5x$$

8) $(5a + 3) - (5a - 3)$

$$5a + 3 + (-5a) + 3$$

$$0a + 6 \rightarrow 6$$

9) $2x - (3x + 5)$

$$2x + (-3x) - 5$$

$$-1x - 5$$

10) Subtract $4x + 6$ from $2x + 9$

$$(2x + 9) - (4x + 6)$$

$$2x + 9 + (-4x) - 6$$

$$-2x + 3$$

11) $(4x - 3) - (7x - 8)$

$$(4x - 3) + (-7x) + 8$$

$$-3x + 5$$

12) $9x - (11x + 6)$

$$9x + (-11x) - 6$$

$$-2x - 6$$

Review

13) Find the measure of the perimeter of a triangle whose sides measure $3x + 5$, $2x + 9$, and $5x + y$.

$$(3x + 5) + (2x + 9) + (5x + y)$$

$$10x + 14 + y$$

14) Simplify the following expressions.

A) $2a - 5b - 4a + 3b$

$$-2a + 8b$$

B) $-10x + 5y - 9x$

$$-19x + 5y$$

C) $3x^2 + x^2$

$$4x^2$$

D) $5(3x^2 + 2x - 6)$

$$15x^2 + 10x - 30$$

E) $-(2x + 8)$

$$-2x - 8$$

F) Subtract 3 from 11

$$11 - 3$$

$$8$$