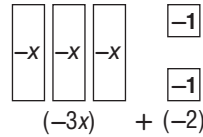# Lesson 7 - Subtract Linear Expressions

> When subtracting expressions, subtract like terms. You can use models or the additive inverse.
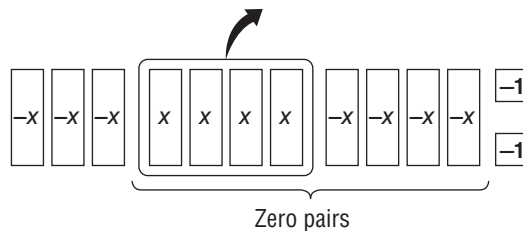
Example 1

Find $(-3x - 2) - (4x)$.

Step 1 Model the expression $-3x - 2$.

$$
\boxed{-x}\,\boxed{-x}\,\boxed{-x} \quad \boxed{-1} \atop \boxed{-1}
$$

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

Step 2 Since there are no positive x-tiles to remove, add four zero pairs of x-tiles. Remove four positive x-tiles.

$$
\boxed{-x}\,\boxed{-x}\,\boxed{-x} \; \overbrace{\boxed{x}\,\boxed{x}\,\boxed{x}\,\boxed{x}} \; \boxed{-x}\,\boxed{-x}\,\boxed{-x}\,\boxed{-x} \quad \boxed{-1}\atop\boxed{-1}
$$

Zero pairs

So, $(-3x - 2) - (4x) = -7x - 2$.

Example 2

Subtract $(4x + 6) - (-7x + 1)$.

The additive inverse of $-7x + 1$ is $7x - 1$.

$$
\begin{array}{ll}
\quad 4x + 6 & \text{Arrange like terms in columns.} \\
\underline{+\ 7x - 1} & \text{Add.} \\
\quad 11x + 5 &
\end{array}
$$

So, $(4x + 6) - (-7x + 1) = 11x + 5$.

Exercises

Subtract. Use models if needed.

1. $(9x + 10) - (2x + 4)$

3. $(6x + 3) - (-x - 2)$

5. $(3x - 1) - (2x - 6)$

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Lesson 7 Skills Practice

Subtract Linear Expressions

Subtract. Use models if needed.

1. $(5x + 7) - (x + 2)$

2. $(2x - 6) - (x - 7)$

5. $(-x + 3) - (4x - 10)$

6. $(5x + 4) - (-8x - 2)$

9. $(-9x + 1) - (-7x + 8)$

10. $(-3x - 9) - (4x + 8)$

13. $(5x - 1) - (-3x + 7)$

14. $(-5x + 4) - (-9x - 2)$

19. $(2x + 4) - (5x - 2)$

20. $(-12x - 6) - (-4x + 3)$

21. **GEOMETRY** The perimeter of the triangle shown is $(10x + 1)$ feet. Find the length of the missing side.

?

$(3x + 6)$ ft

$(5x - 2)$ ft