

7.3 Adding Linear Expressions

A linear expression is an algebraic expression in which the variable is raised to the first power.

Example: Add.

a.) $(3x + 4) + (2x + 1)$

$$5x + 5$$

b.) $(-4x + 2) + (-2x + 2)$

$$-6x + 4$$

Example: Add.

c.) $(x - 3) + (x - 4)$

$$2x - 7$$

d.) $(-x + 1) + (-3x)$

$$-4x + 1$$

e.) $(4x + 5) + (3x + 7)$

$$7x + 12$$

f.) $(-3x + 8) + (-2x + 2)$

$$-5x + 10$$

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Example: Add.

g.) $(3x + 2) + (-x + 4)$

$$2x + 6$$

h.) $(-2x + 4) + (8x - 4)$

$$6x + 0 = 6x$$

i.) $(-4x - 1) + (5x - 3)$

$$1x - 4$$

or

$$x - 4$$

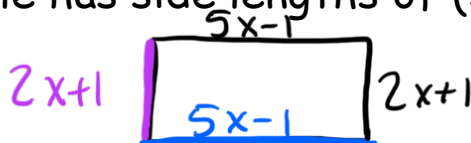
j.) $(4x - 3) + (-x + 5)$

$$3x + 2$$

Linear expressions can be used to find perimeter.

add all sides

Example: A rectangle has side lengths of $(5x - 1)$ units and $(2x + 1)$ units.



a.) Write and simplify a linear expression for the perimeter of the rectangle.

$$P = (5x - 1) + (2x + 1) + (5x - 1) + (2x + 1) = 14x + 0 = 14x$$

b.) Find the perimeter of the rectangle if the value of x is 5.4 units.

$$P = 14x = 14(5.4)$$

$$P = 75.6 \text{ units}$$

$$\begin{array}{r} 14 \\ \times 5.4 \\ \hline 56 \\ + 700 \\ \hline 75.6 \end{array}$$