

Do Now

Performing operations with Linear Functions

* A linear function is a function in which when you graph it on a coordinate plane you would get a straight line.

* $f(x)$, $g(x)$, $h(x)$ are examples of notations that may be used to represent linear function.

* If you have a linear function you may perform operations on the functions.

Examples:

1) Given $f(x) = 3x - 1$ and $g(x) = -2x + 2$, find $h(x) = f(x) + g(x)$

$$h(x) = (3x - 1) + (-2x + 2)$$

$$h(x) = 3x - 1 - 2x + 2$$

$$h(x) = x + 1$$

2) Given $f(x) = x + 5$ and $g(x) = 4x - 2$, find $h(x) = f(x) - g(x)$

$$h(x) = (x + 5) - (4x - 2)$$

$$h(x) = x + 5 - 4x + 2$$

$$h(x) = -3x + 7$$

3) Given $f(x) = 3$ and $g(x) = \frac{1}{3}x - 2$, find $h(x) = f(x) \cdot g(x)$

$$h(x) = 3 \left(\frac{1}{3}x - 2 \right)$$

$$h(x) = x - 6$$

4) Given $f(x) = 4$, $g(x) = x + 1$, and $h(x) = x$, find $j(x) = f(x) \cdot [g(x) + h(x)]$

$$j(x) = 4 \cdot [(x + 1) + x]$$

$$j(x) = 4 \cdot [x + 1 + x]$$

$$j(x) = 4 \cdot [2x + 1]$$

$$j(x) = 8x + 4$$