

# EOC Review #5

## Functions

\* operations — add, subtract, multiply, divide

$$f(x) = 2x + 1 \quad g(x) = x^2$$

$$\left. \begin{aligned} f + g &= (2x + 1) + (x^2) = x^2 + 2x + 1 \\ f - g &= (2x + 1) - (x^2) = -x^2 + 2x + 1 \end{aligned} \right\} \begin{array}{l} \text{just combine like} \\ \text{terms} \end{array}$$

$$f \cdot g = (2x + 1) \cdot (x^2) = 2x^3 + x^2 \rightarrow \text{distribute}$$

$$f/g = \frac{2x + 1}{x^2}, x \neq 0 \rightarrow \text{denominator} \neq 0$$

.. composition  $\rightarrow$  putting functions into each other

$$f \circ g = 2(x^2) + 1 = 2x^2 + 1 \leftarrow \text{put } g \text{ into } f$$

$$g \circ f =$$

\* evaluate composition

$$f(g(2)) = f(2^2) = f(4) = 2(4) + 1 = 9 \leftarrow \begin{array}{l} \text{evaluate } g(2) \text{ then} \\ \text{put that \# into} \\ f. \end{array}$$

$$g(f(-3)) =$$

$$f(g(0)) =$$

\* inverse  $\rightarrow$  switch  $x$  &  $y$ , solve for  $y$

$$f(x) = x^2 + 7$$

$$g(x) = 2\sqrt{x} - 3$$

$$y = x^2 + 7$$

$$x = y^2 + 7$$

$$x - 7 = y^2$$

$$\sqrt{x - 7} = y$$

$$f^{-1}(x) = \sqrt{x - 7}$$

---

different types of functions

