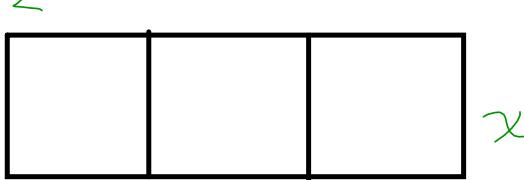


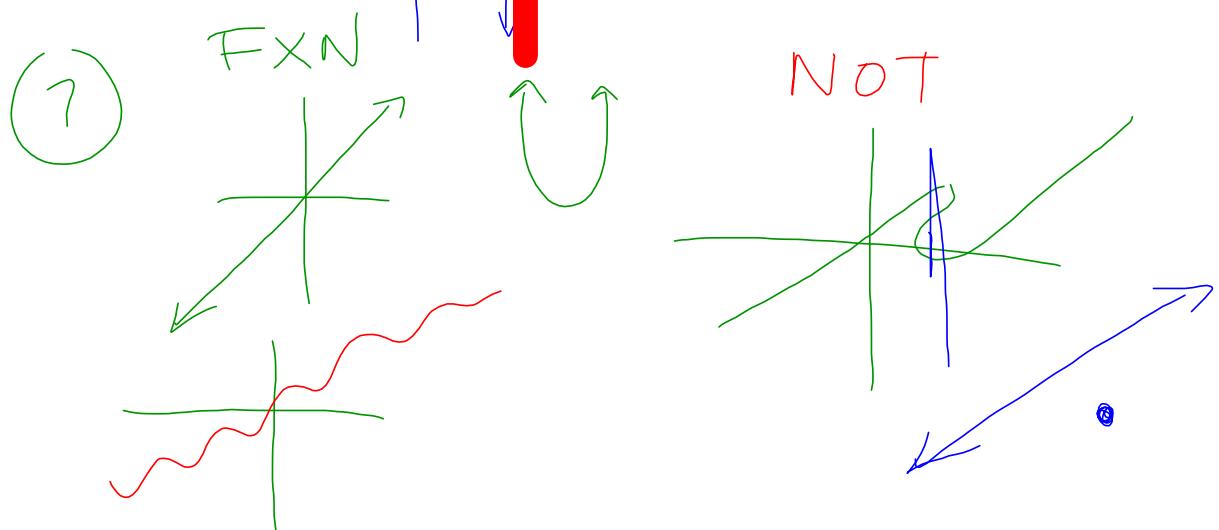
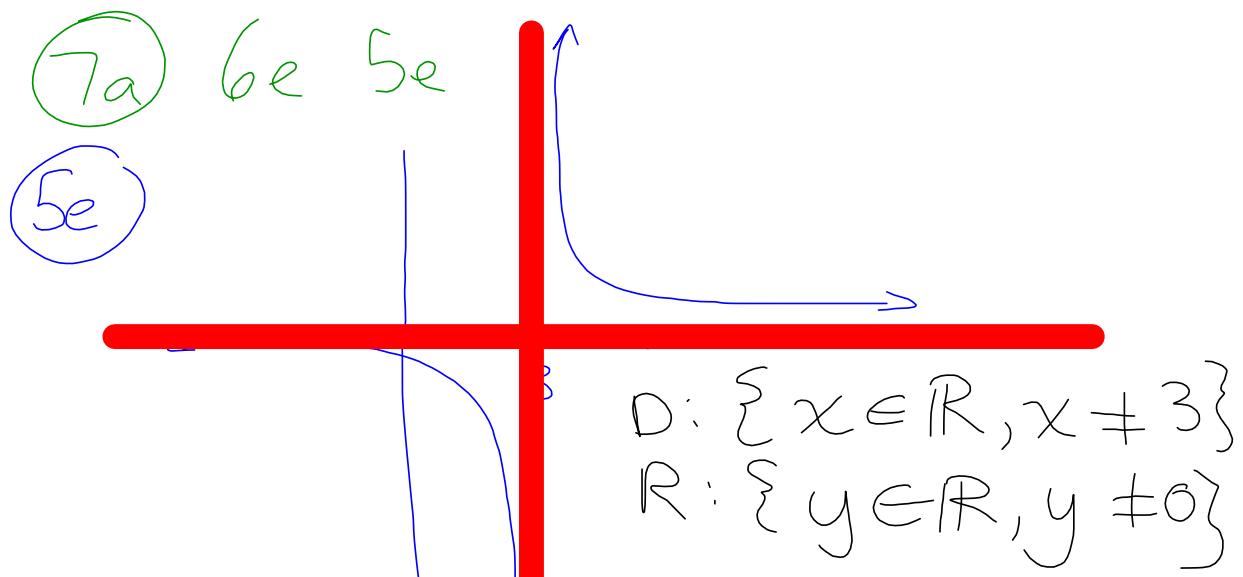
# Homework Qs???

⑧ 

$$P = 2y + 4x$$

$$90 = 2y + 4x$$

$$90 - 4x = 2y$$



## 1.2: Functions and Function Notation

Standard Notation	vs.	Function Notation
$y = x + 3$ Solve for $y$ when $x = 1$ . $y = 1 + 3$ $y = 4$ $(1, 4)$		$f(x) = x + 3$ Find $f(1)$ . $f(1) = 1 + 3$ $= 4$ $(1, 4)$

Note:  $f$  is not a variable.

$f(x)$  does not mean  $f$  times  $x$ .

It means: What is the value of the function,  $f$ , when  $x$  equals a certain value?

Ex. For each Function, determine the values indicated

$$y = 3x^2 - 2x + 1$$

1. If  $f(x) = 3x^2 - 2x + 1$ , find  $f(-1)$ .

$$f(-1) = 3(-1)^2 - 2(-1) + 1$$

$$= 3 + 2 + 1$$

$$f(-1) = 6$$

↳ corresponds to  $(-1, 6)$

2. If  $f(x) = -3x + 2$ , find  $x$  if  $f(x) = 0$ .

$$0 = -3x + 2$$

$$3x = 2$$

$$x = \frac{2}{3}$$

3. If  $f(x) = x^2 - 6x$ , find  $x$  if  $f(x) = 16$ .

$$16 = x^2 - 6x$$

$$0 = x^2 - 6x - 16$$

$$0 = (x-8)(x+2)$$

$$x = 8 \quad x = -2$$

$$M : 16$$

$$A : -6$$

$$N : -8, 2$$

4. If  $f(x) = 2x^2 - 3x$ :

a) find  $3f(2)$

$$f(x) = 2x^2 - 3x$$

$$f(2) = 2(2)^2 - 3(2)$$

$$f(2) = 8 - 6$$

$$f(2) = 2$$

$$3f(2) = 3(2)$$

$$= 6$$

$$\begin{aligned} 3f(2) &= 3[2x^2 - 3x] \\ &= 3[2(2)^2 - 3(2)] \\ &= 6 \end{aligned}$$

b)  $f(m+1)$

$$f(x) = 2x^2 - 3x$$

$$f(m+1) = 2(m+1)^2 - 3(m+1)$$

$$= 2(m+1)(m+1) - 3(m+1)$$

$$= 2(m^2 + m + m + 1) - 3m - 3$$

$$= 2(m^2 + 2m + 1) - 3m - 3$$

$$= 2m^2 + 4m + 2 - 3m - 3$$

$$= 2m^2 + m - 1$$

c)  $f(f(x))$

$$f(x) = 2x^2 - 3x$$

$$f(f(x)) = 2(2x^2 - 3x)^2 - 3(2x^2 - 3x)$$

$$= 2(2x^2 - 3x)(2x^2 - 3x) - 6x^2 + 9x$$

$$= 2(4x^4 - 6x^3 - 6x^3 + 9x^2) - 6x^2 + 9x$$

$$= 8x^4 - 12x^3 - 12x^3 + 18x^2 - 6x^2 + 9x$$

$$f(f(x)) = 8x^4 - 24x^3 + 12x^2 + 9x$$

# HOMEWORK

p. 22 #C1, C2, 1ace, 3a, 11,  
and Handout

