9/26 Algebra 1 - Downing

3.3 A Function Notation

Evaluate the expression for $x = -12$ and $x = 3$ (Plug in)

1.) $-x-3$ $\quad -x-3$

$-(-12)-3 \quad -(3)-3$

$= \boxed{9} \quad = \boxed{-6}$

2) $3x^2-(2x-x^3) \quad 3x^2-(2x-x^3)$

$3(-12)^2-(2(-12)-(-12)^3) \quad 3(3)^2-(2(3)-(3)^3)$

$= \boxed{-1272} \quad = \boxed{48}$

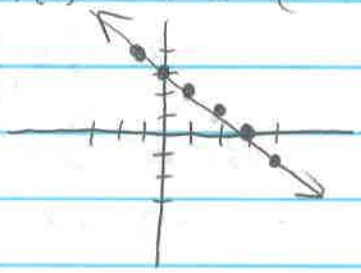
3.) $x+6x(2x+3x)\div 4 \quad x+6x(2x+3x)\div 4$

$(-12)+6(-12)(2(-12)+3(-12))\div 4 \quad 3+6(3)(2(3)+3(3))\div 4$

$= \boxed{1068} \quad = \boxed{70.5}$

The notation $f(x)$ "f of x", called function notation is another name for y.

Ex) $f(x) = -x+3$ (same as $y = -x+3$)



a) $(-1, f(-1))$ $\quad$ c) $(1, f(1))$

$(-1, 4) \quad (1, 2)$

b) $(0, f(0))$ $\quad$ d) $(2, f(2))$

$(0, 3) \quad (2, 1)$

Ex) Evaluate $f(x) = -4x+7$ when $x = 2$ and $x = -2$

$f(2) = -4(2)+7 \quad f(-2) = -4(-2)+7$

$f(2) = -8+7 \quad f(-2) = 8+7$

$f(2) = -1 \quad f(-2) = 15$

$(2, -1) \quad (-2, 15)$

Ex) Let $f(t)$ be the outside temp (F°) t hours after 6am. Explain the meaning of each statement.

a) $f(0) = 58 \rightarrow$ at 6am it is 58° F

b) $f(6) = n \rightarrow$ at 12:00 Noon it is n° F

c) $f(3) < f(9)$

Temp at 9am is less than Temp at 3pm

Ex) For $f(x) = 3x+2$ and $g(x) = 6x-5$ Evaluate the following

1) $f(2) \rightarrow f(2) = 3(2)+2$

$f(2) = 6+2$

$f(2) = 8$

$\boxed{(2, 8)}$

2) $g(-3) \rightarrow g(-3) = 6(-3)-5$

$g(-3) = -18-5$

$g(-3) = -23$

$\boxed{(-3, -23)}$

3) $f(-1) \rightarrow f(-1) = 3(-1)+2$

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

$f(-1) = -1$

$\boxed{(-1, -1)}$

4) $3\,g(5) \rightarrow 3(6(5)-5)$

$g(5) \rightarrow 3(30-5)$

$g(5) \rightarrow 3(25)$

$g(5) \rightarrow 75$

$\boxed{(5, 75)}$

5) $f(-1) + g(-4)$

$f(-1) = 3(-1)+2$ → $f(-1) = -3+2$ → $f(-1) = \boxed{-1}$

$g(-4) = 6(-4)-5$ → $g(-4) = -24-5$ → $g(-4) = \boxed{-29}$

$f(-1) + g(-4) = \boxed{-1} + \boxed{-29}$

$-1 + -29$

$= \boxed{-30}$

6) $g(3) - f(2)$

$g(3) = 6(3)-5$ → $g(3) = 18-5$ → $g(3) = \boxed{13}$

$f(2) = 3(2)+2$ → $f(2) = 6+2$ → $f(2) = \boxed{8}$

$g(3) - f(2) = \boxed{13} - \boxed{8}$

$13 - 8$

$= \boxed{5}$

Ex) For $h(x) = \frac{2}{3}x - 5$

find x when $h(x) = -7$

$-7 = \frac{2}{3}x - 5$

$+5 \quad +5$

$(\frac{3}{2})-2 = \frac{2}{3}x(\frac{3}{2})$

$-3 = x$

$\boxed{(-3, -7)}$

HW - Worksheet 3.3A

Front Only