Mr. Lalim
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Sept. 14th
Alg. II

Functions Part 2

(homework review)

Evaluating Functions: Find each value if $f(x)=3x-5$ and $g(x)=x^2-x$

#35) $g(3)$ [function notations]

$g(x)=x^2-x$ > put 3 in place of "x"

[Keep this the same]

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

$g(3)=9-3$

($g(3)=6$) → Final answer

#34) $f(-3)$

$f(x)=3x-5$

$f(-3)=3(-3)-5$

$f(-3)=-9-5$

$f(-3)=-14$

(Power of a power rule in exponential terms)

#39) $g(5n)$

$g(x)=x^2-x$

$g(5n)=5n^2-5n$) [must be like terms to combine]

$g(5n)=25n^2-5n$

If n is 3

$g(5n)=25(3)^2-5n$

$g(5n)=25(9)-15$

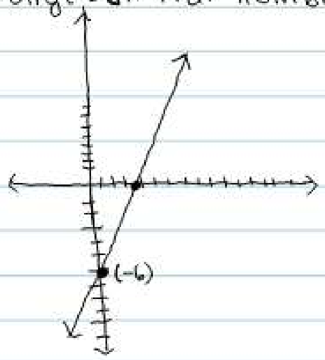
$g(5n)=210$

#28) $y=7x-6$

$y=mx+b$ (slope-intercept form of a line)

Domain = all real numbers (x values) so its a function

Range = all real numbers (y values)



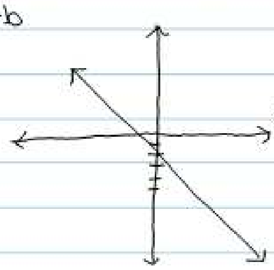
(-6)

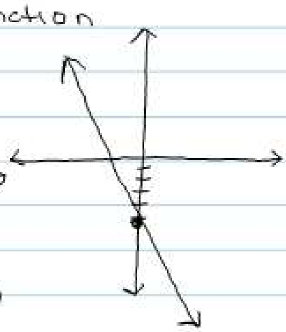
(-2, 1) (1, 2) (3.5, -0.3)

#31) (-2, 2) no longer a function

$y=5x+0$ yes it is a function

$y=mx+b$





41) $h(-2)$

$h(x)=\frac{x^2+5x-6}{x+3}$

~~h(-2)=x1~~

$h(-2)=\frac{-2^2+5(-2)-6}{-2+3}$

$=\frac{4(+-10)-6}{-2+3}$ $\frac{4-16}{1}=\frac{-12}{1}=-12$

$h(-2)=-12$

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42.) $h(a-1)$ $\qquad h(x) = \frac{x^2+5x-6}{x+3}$

$$h(a-1) = \frac{a-1^2+5(a-1)-6}{a-1+3}$$

$$h(a-1) = \frac{(a-1)^2+5(a-1)-6}{(a-1)+3}$$

$$h(a-1) = \frac{(a-1)^2+5a-5-6}{(a-1)+3}$$

$$h(a-1) = \frac{(a-1)^2+5a-11}{a+2}$$

(binomial)

$(5x)^2 = 25x^2$

$(a-1)^2 =$

$(a-1)(a-1)$

$a^2-a-a+1$

a^2-2a+1

$$h(a-1) = \frac{a^2-2a+1+5a-11}{a+2}$$

$$h(a-1) = \frac{a^2+3a-10}{a+2}$$ (Polynomial division)

$f(x) = \frac{5}{x+2}$ $\qquad g(x) = -2x-1$ $\qquad f(m-2)$ $5/m$

$\frac{5}{m}$ $\qquad -2$ $\qquad g(1/2)$ -2

$f(-6)$ -5

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Introduction B3 Alg I

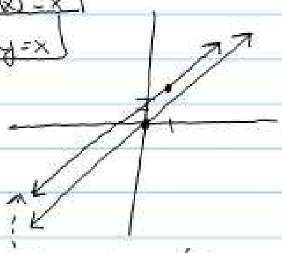
1-9 Parent functions

* Similar to the way that numbers are classified into sets based on common characteristics, functions can be classified into *families of functions*. The Parent function is the simplist function with the defining characteristics of the family. Functions in the same family are transformed ~~into~~ their parent functions.

$\boxed{f(x)=x}$

$\boxed{y=x}$

x	y
1	1
0	0
2	2



$y=1x+0$

$y=mx+b$

$y=1x+0$

$y=x$

$y=x$

$f(x)=x$

$f(x)=1x+0$ (mx + b)

$f(x)=1x+2$

x	y
0	2
1	3

** Translating (Translation) ← shifting positions (moving from one place another)

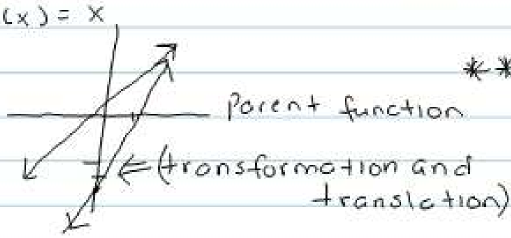
*** - refeer to hand out or Power point on www.edmodo.com for table!

$\sqrt{64} = \pm 8$ only (+) half of a $\sqrt{\ }$ funtion can be looked at

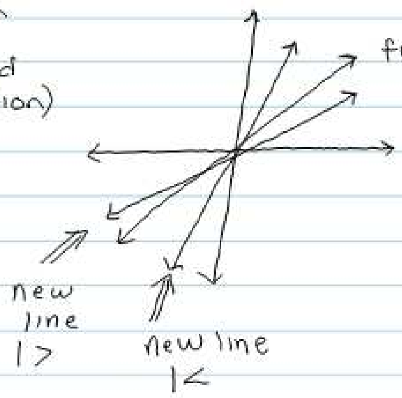
$\boxed{\text{Hint}}$ use standard square window, ZOOM choose 6:2 press Zoom write 5:2 press Zoom on graphing calculator.

$g(x)=x-3$ is linear x has power of 1

$f(x)=x$



** transformation - changing the slope



$f(x)=x+0$

m → >1, <1

$f(x)=2x$

x	y
0	0
1	2
2	4

$f(x)=3x+{}^{-}5$

$f(x)=3x-5$

x	y
0	-5
1	-2

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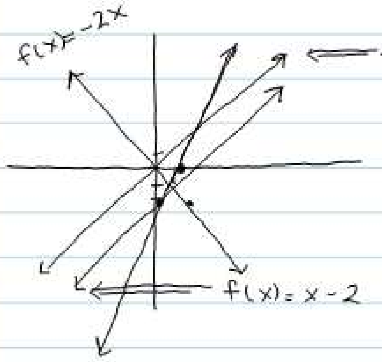
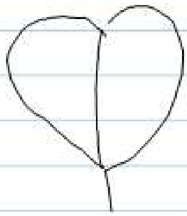
(Alg. II Cont.)





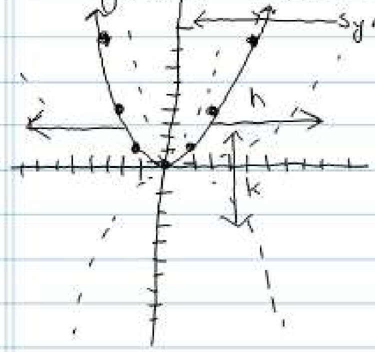
axis of symetry

The Quadradic Function

$g(x)=x^2+5$

↑

$g(x)=x^2$ (parent function)



$f(x)=x^2$

x	y
0	0
1	1
2	4
3	9
-1	1
-2	4
-3	9

$f(x)=a(x-h)^2+k$ ← Perobila

$f(x)=1(x-0)^2+0$

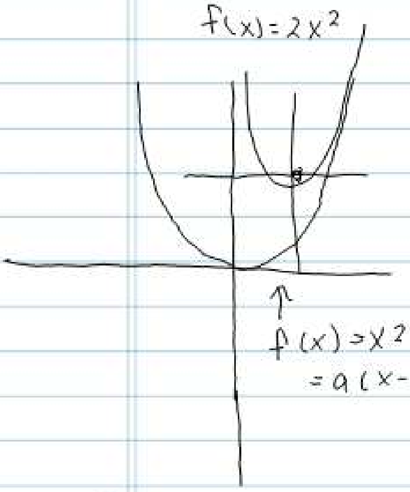
↓

$f(x)=x^2$

$f(x)=x^2$

$f(x)=2x^2$

$f(x)=2x^2$



a→ direction and stretch

h→ where on x-axis or direction

k→ up or down

↑

$f(x)=x^2$

$=a(x-h)^2+k$

$y=2x-2^2+4$