28

hw: green text p. 528 1/29
#s 10-14, & 16

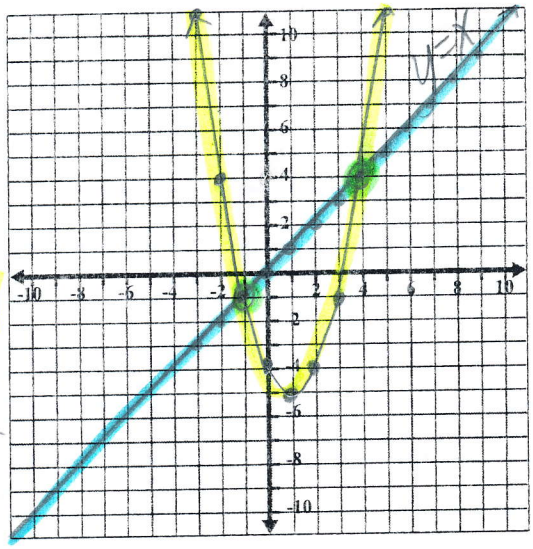
10.) $y = x^2 - 2x - 4 \rightarrow a=1$ $\quad x = \frac{-b}{2a}$

$y = x \quad b=-2$

$m = \frac{1}{1} \quad b=0 \quad c=-4$ $\quad x = \frac{-(-2)}{2(1)}$

$x = 1$

x	y
-2	4
-1	-1
0	-4
1	-5
2	-4
3	-1
4	4



$f(x)$
$y = x^2 - 2x - 4$
$f(1) = (1)^2 - 2(1) - 4$
$= 1 - 2 - 4$
$= -1 - 4$
$f(1) = -5$

2 solutions at $(-1, 1)$ & $(4, 4)$

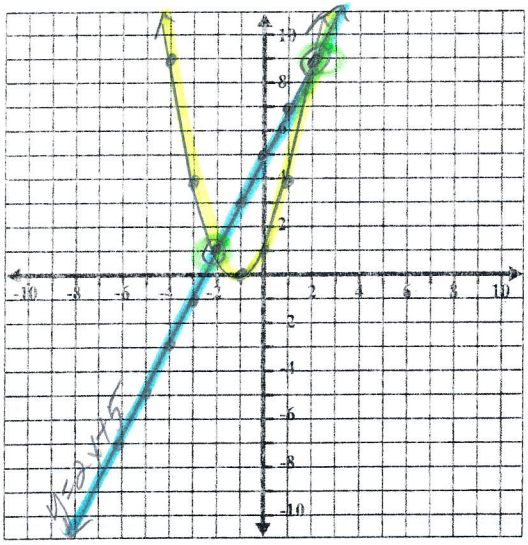
11.) $y = x^2 + 2x + 1 \rightarrow a=1$ $\quad x = \frac{-b}{2a}$

$y = 2x + 5 \quad b=2$

$m = \frac{2}{1}, b=5 \quad c=1$ $\quad x = \frac{-(2)}{2(1)}$

$x = -1$

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



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

2 solutions at $(-2, 1)$ & $(2, 9)$

has a max. pt
↑ negative "a"

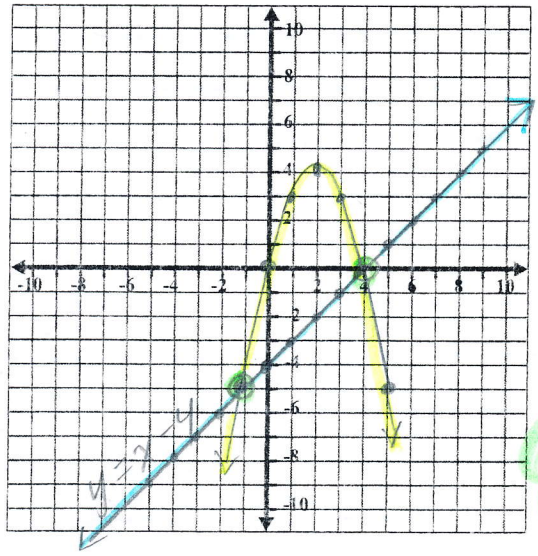
* 12) $y = 4x - x^2 \rightarrow a = -1$ $x = \frac{-b}{2a}$

$y = x - 4$ $b = 4$

$m = \frac{1}{1}, b = -4$ $c = 0$ $x = \frac{-(4)}{2(-1)}$

$x = 2$

x	y
-1	-5
0	0
1	3
2	4
3	3
4	0
5	-5



$f(x)$

$y = 4x - x^2$

$f(2) = 4(2) - (2)^2$

$= 8 - 4$

$f(2) = 4$

Has 2 solutions at $(-1, -5)$ & $(4, 0)$

13) $y = x^2 - 8x + 15 \rightarrow a = 1$ $x = \frac{-b}{2a}$

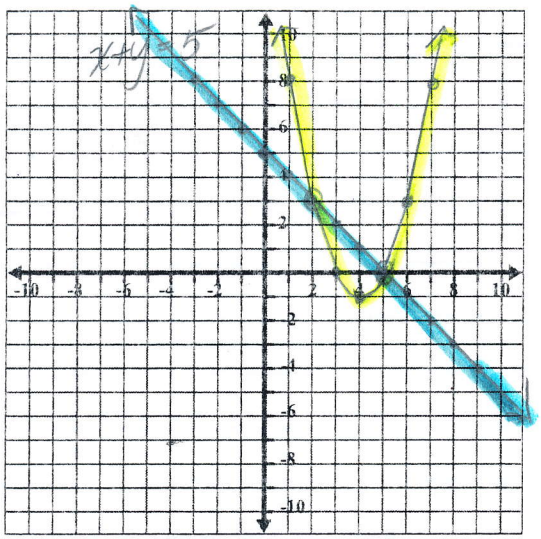
$x + y = 5$ $b = -8$

$-x \quad -x$ $c = 15$ $x = \frac{-(-8)}{2(1)}$

$y = -x + 5$

$m = \frac{-1}{1}, b = 5$ $x = 4$

x	y
1	8
2	3
3	0
4	-1
5	0
6	3
7	8



$f(x)$

$y = x^2 - 8x + 15$

$f(4) = (4)^2 - 8(4) + 15$

$= 16 - 32 + 15$

$= -16 + 15$

$f(4) = -1$

Has 2 solutions at $(2, 3)$ & $(5, 0)$

24

neg. "a" → ratio (-1, -3, -5)

* 14.) $y = -x^2 + 6x - 5$ → $a = -1$, $b = 6$, $c = -5$

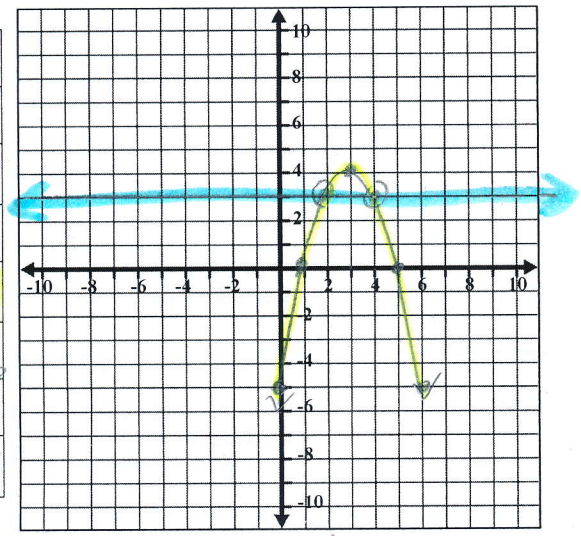
$y = 3$ ↓ horizontal line

$x = \frac{-b}{2a}$

$x = \frac{-(6)}{2(-1)}$

$x = 3$

x	y
0	-5
1	0
2	3
3	4
4	3
5	0
6	-5



$f(x)$

$y = -x^2 + 6x - 5$

$f(3) = -(3)^2 + 6(3) - 5$

$= -9 + 18 - 5$

$= 9 - 5$

$f(3) = 4$

Has 2 solutions at (2,3) & (4,3)

** 16.) $y = x^2 + x - 4$ → $a = 1$, $b = 1$, $c = -4$

$2x - y = 2$

$-2x \quad -2x$

$-y = -2x + 2$

$y = 2x - 2$

$m = \frac{2}{1}$

$b = -2$

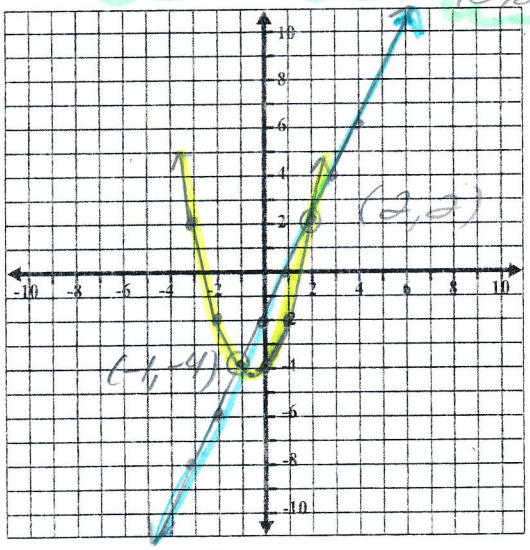
$x = \frac{-b}{2a}$

$x = \frac{-(1)}{2(1)}$

$x = -0.5$

2 solutions (-1, -4) & (2, 2)

x	y
-3	2
-2	-2
-1	-4
-0.5	-4.25
0	-4
1	-2
2	2



$f(x)$

$y = x^2 + x - 4$

$f(-0.5) = (-0.5)^2 + (-0.5) - 4$

$= +0.25 - 0.5 - 4$

$= -0.25 - 4$

$f(-0.5) = -4.25$

$f(1) = (1)^2 + (1) - 4$

$f(1) = -2$

$f(2) = (2)^2 + (2) - 4$

$f(2) = 2$