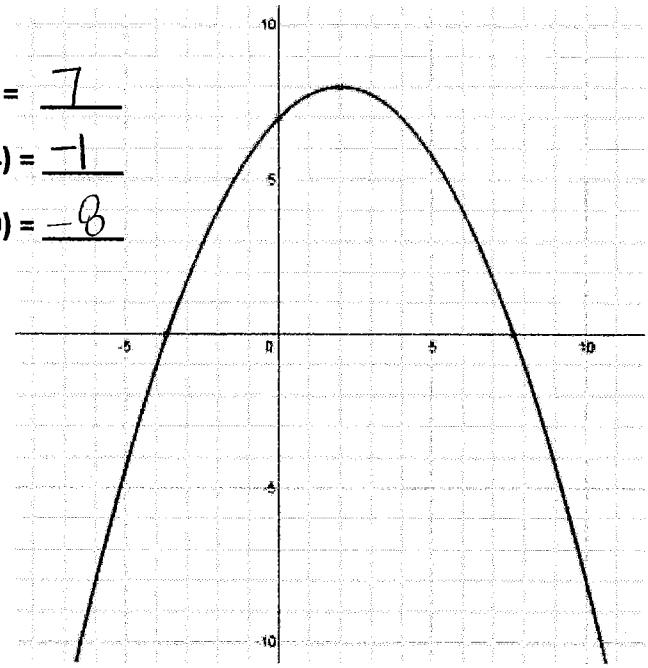
Algebra 2 – Unit 2 Review

Name: Mikey Hour:_____

For #1 and 2, evaluate each function for *f*(0), *f*(–4) and *f*(10)

1.



***f*(0) =** 7

***f*(–4) =** -1

***f*(10) =** -8

2. $f(x) = x^3 - 6x + 3$

***f*(0) =** 3 $(0)^3 - 6(0) + 3$

***f*(–4) =** -31 $(-4)^3 - 6(-4) + 3$

$-64 + 24 + 3$

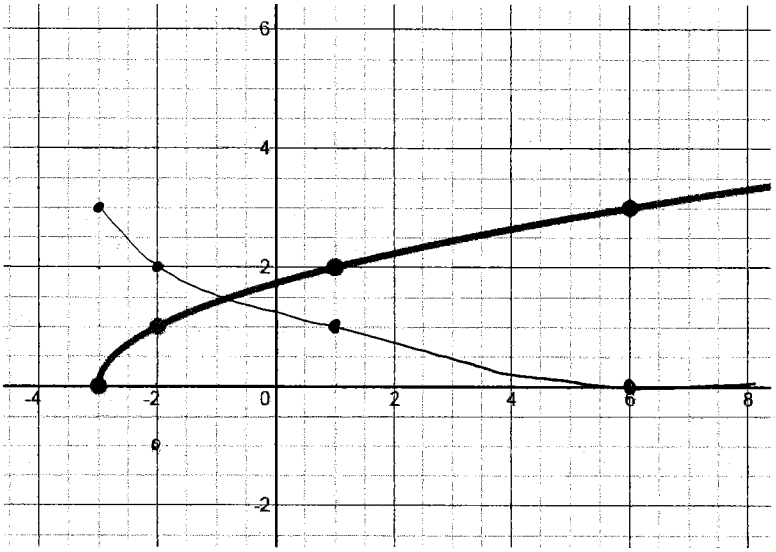
***f*(10) =** 943 $(10)^3 - 6(10) + 3$

$1000 - 60 + 3$

3. Sketch one graph with the following transformations: reflection over the *x*–axis, translation 3 units up.

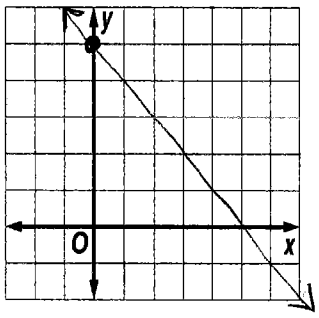
Fill in the table for your new graph.

x	-3	-2	1	6
f(*x*)	3	2	1	0



Graph the equations:

4. $y = 5 - x$ $y = -x + 5$



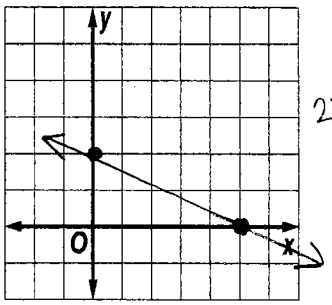
5. $2x + 5y = 10$

$2(0) + 5y = 10$

$y = 2$

$2x + 5(0) = 10$

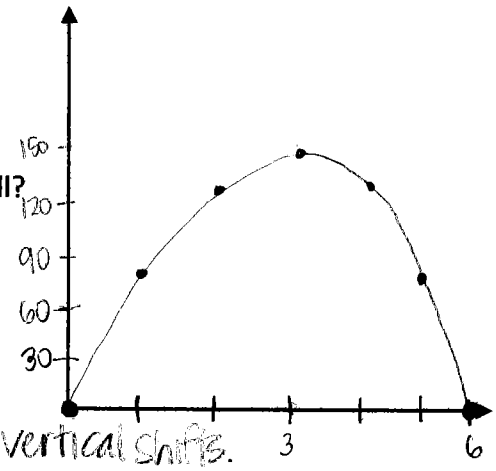
$x = 5$



6. The data for the height of a ball, thrown straight up into the air is listed in the table below.

Time (sec)	0	1	2	3	4	5	6
Height (ft)	0	80	128	144	128	80	0

Sketch a graph.



What parent function does this data represent? How can you tell?

Quadratic – because it is a parabola.

$y=x^2$

What are the transformations from the parent function?

~~Dilation~~ & reflection across y-axis & horizontal & vertical shifts.

What transformation would occur to your graph if the ball was thrown up *faster*?

It would compress

7. $f(x)=|x-7|+5$

Parent function: absolute value

Transformation(s): horizontal & vertical shift (right 7, up 5)

8. $f(x)=-\frac{1}{2}x^2+1$

Parent function: quadratic

Transformation(s): stretch & shift (up 1, dilation), reflection across x-axis.

9. $f(x)=4\sqrt{x+2}$

Parent function: square root

Transformation(s): stretch & shift left (2 units)

10. $f(x)=x-7$

Parent function: linear

Transformation(s): right 7 units or down 7 units

For #11-16, write the slope-intercept form of each equation, given the specific information.

11. passes through (–5, –2) and has slope –1.

$y+2=-1(x+5)$

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

12. passes through (0, –5) and (5, –3)

$m=\frac{-3+5}{5-0}=\frac{2}{5}$

$y=\frac{2}{5}(x-5)-3$

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

$\boxed{y=\frac{2}{5}x-5}$

13. passes through (5, 3) and is parallel to $y=\frac{6}{5}x+5$

$y=\frac{6}{5}(x-5)+3$

$\boxed{y=\frac{6}{5}x-3}$

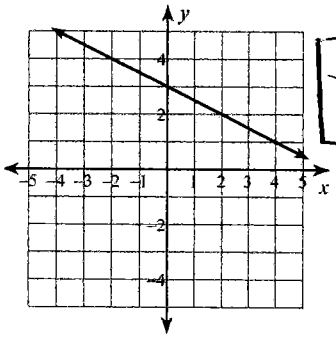
14. passes through (–1, 0) and is perpendicular to $y = x - 2$

$m = -1$

$y = -1(x+1)$

$\boxed{y = -x - 1}$

15.



$\boxed{y = -\frac{1}{2}x + 3}$

16. $-2x + 7y = 14$

$\boxed{y = \frac{2}{7}x + 2}$

17. Suppose you bought a $340 iPad on credit. You pay off $20 each week.

a) Write a linear equation to describe the situation. $y =$ $20x - 340$

b) In your equation, what does x represent? # of weeks

What does y represent? Amount still owed

c) How many weeks would it take you to pay off the entire iPad? (Show your work.)

$y = 20x - 340$ $\quad y = 0$

$20x = 340$

$x = 17$

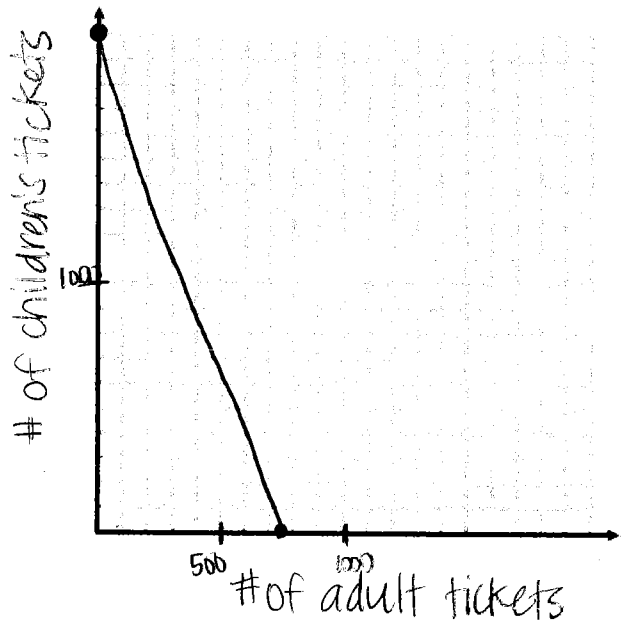
$\boxed{\text{17 weeks to pay off the ipad}}$

18. At a charity fund-raiser, adult tickets were sold for $8 each and children's tickets were sold for $3 each. The charity wants to raise $6000. Using A for the number of adult tickets and C for the number of children's tickets, write an equation to show how the charity can reach their goal.

$8A + 3C = 6000$

Graph your equation. Include labels.

(750, 0) (0, 2000)



Find the value of C when $A = 0$. Explain in real world terms what this represents.

$C = 2000$

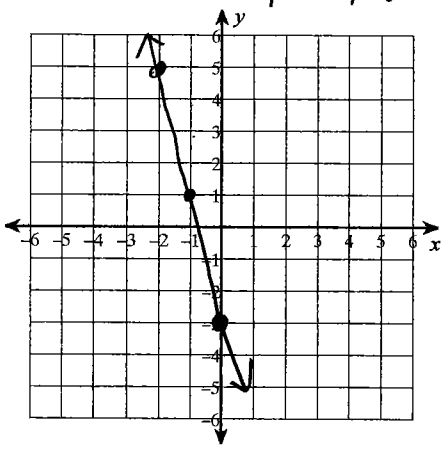
This means 2000 children's tickets would have to be sold if NO adult tickets are sold.

Algebra 2

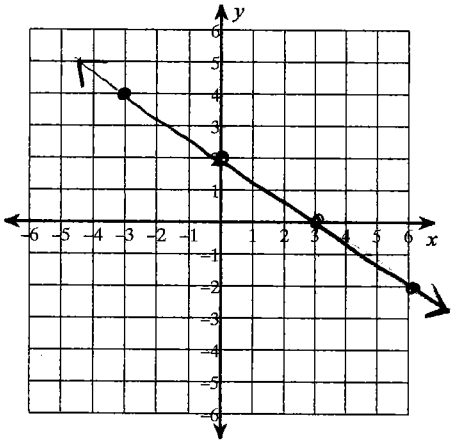
Ch 2 Supplemental Review

Sketch the graph of each line.

1) $y = -3 - 4x$ $\quad y = -4x - 3$



2) $0 = -2 + y + \frac{2}{3}x$ $\quad y = -\frac{2}{3}x + 2$



Write the slope-intercept form of the equation of each line.

3) $5x + 2y = 16$

$\boxed{y = \frac{-5}{2}x + 8}$

4) through: $(0, 4)$ and $(4, 5)$ $\quad m = \frac{1}{4}$

$y - 4 = \frac{1}{4}(x - 0)$

$\boxed{y = \frac{1}{4}x + 4}$

Write the slope-intercept form of the equation of the line described.

5) through: $(3, 3)$, parallel to $y = x + 3$

$y = 1(x - 3) + 3$

$\boxed{y = x}$

6) through: $(-4, 1)$, perp. to $y = -\frac{4}{3}x + 4$

$m = \frac{3}{4}$

$y = \frac{3}{4}(x + 4) + 1$

$\boxed{y = \frac{3}{4}x + 4}$

7) through: $(1, -1)$, perp. to $y = -\frac{3}{4}x$ $\quad m = \frac{4}{3}$

$y = \frac{4}{3}(x - 1) - 1$

$y = \frac{4}{3}x - \frac{4}{3} - \frac{3}{3} \rightarrow \boxed{y = \frac{4}{3}x - \frac{7}{3}}$

Evaluate each function.

8) $g(x) = |x| - 2$; Find $g(5)$

$g(5) = |5| - 2$

$\boxed{g(5) = 3}$

9) $w(x) = x^2 + 4 - 2x$; Find $w(2)$

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

$= 4 + 4 - 4$

$\boxed{w(2) = 4}$