Algebra 2: Ch. 1 Review Worksheet   Name _____ Date _____ Per ____

#1-2: Write an equation of the line and interpret the slope.

1.

Child Growth Rate

Height (inches) vs Months (after birth). Points (1, 15) and (6, 30).

2.

Home Phone Sales

Sales (millions) vs Years (after 1995). Points (1, 600) and (5, 200).
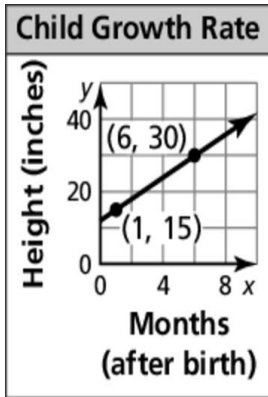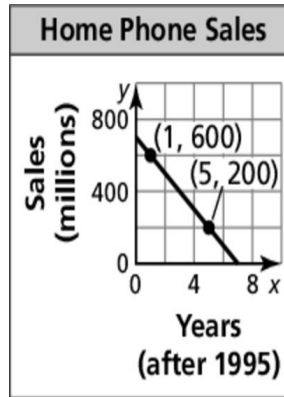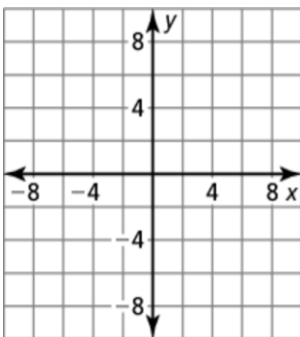
#3-4: Solve the system. Check your solution, if possible.
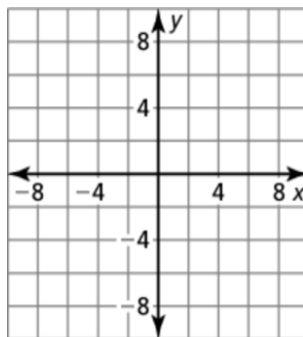
3. $3x - 3y + z = 10$

$3x + 2y - 3z = -2$

$-3x + z = -2$

4. $-x - y - 2z = 9$

$-2x + 2y - 2z = -8$

$x - y + z = 5$

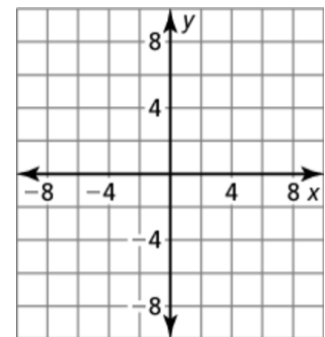**#5-7: Graph the function and its parent function. Then describe the transformation.**

5. $f(x) = x - 5$

6. $g(x) = 2 + |x|$

7. $h(x) = -\frac{1}{3}x^2$

#8-12: Write a function *g* whose graph represents the indicated transformation of the graph *f*.

8. $f(x) = -3|x + 1| - 4$; translation 3 units up

9. $f(x) = \frac{2}{3}x^2 + 2$; vertical stretch by a factor of 3

10. Let the graph of *g* be a vertical shrink by a factor of $\frac{1}{2}$, followed by a translation 3 units down of the graph of $f(x) = |x|$. Write a rule for *g*.

11. Let the graph of *g* be a translation 2 units left, followed by a vertical stretch by factor of 2 of the graph of $f(x) = |x|$. Write a rule for *g*.

12. Let the graph of *g* be a reflection in the x-axis, followed by a translation 4 units down of the graph of $f(x) = \sqrt{x}$ Write a rule for *g*.

13. You design a computer game. Your revenue for *x* downloads is given by $f(x) = 2x$. Your profit is $50 less than 90% of the revenue for *x* downloads. Describe how to transform the graph of *f* to model the profit. What is your profit for 100 downloads?