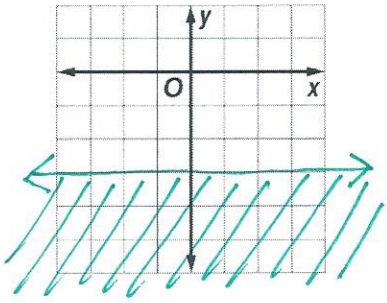
Graphing Linear & Absolute Value & Inequalities
HOMEWORK

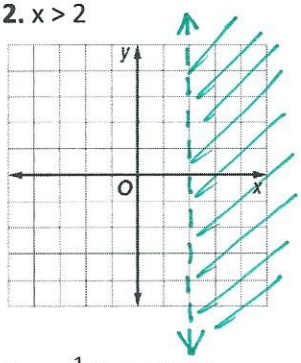
Name Key
Date _____ Block _____

1-9: Graph each inequality. *Do not use the calculator!*

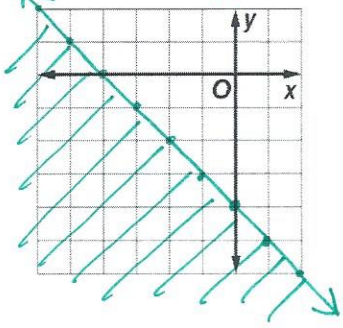
1. $y \le -3$



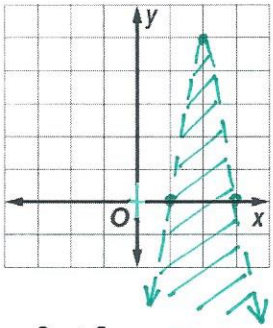
2. $x > 2$



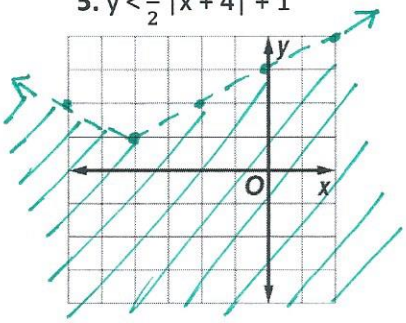
3. $x + y \le -4$ $y \le -x - 4$



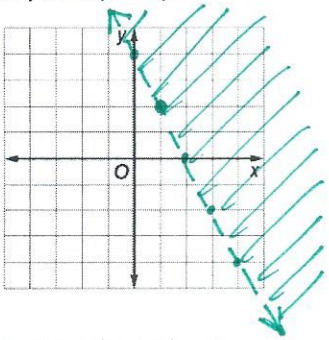
4. $y < -5|x-2|+5$



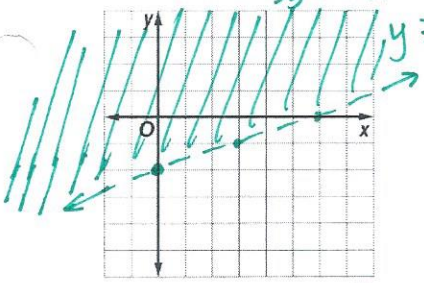
5. $y < \frac{1}{2}|x+4|+1$



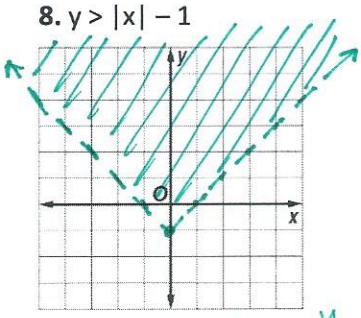
6. $y \ge -2(x-1)+2$



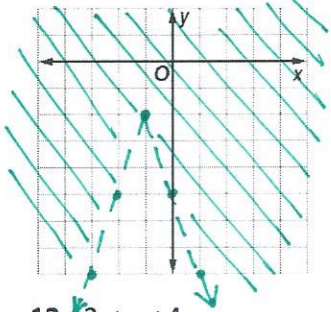
7. $x - 3y \le 6$ $-3y \le -x+6$ $y \ge \frac{1}{3}x - 2$



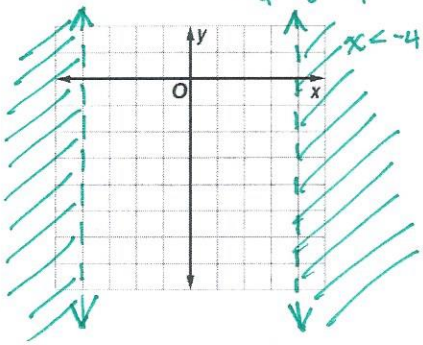
8. $y > |x| - 1$



9. $y > -3|x+1|-2$

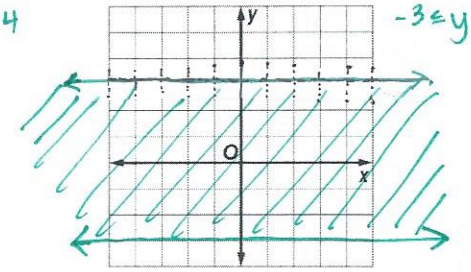


10. $|x| > 4$ $x < -4$ or $x > 4$



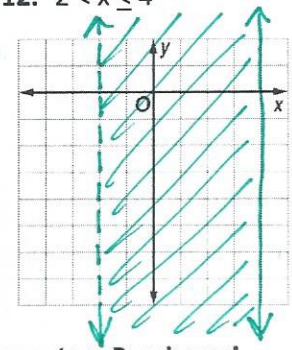
$x < -4$ or $x > 4$

11. $|y| \le 3$



$-3 \le y \le 3$

12. $-2 < x \le 4$



13. COMPUTERS A school system is buying new computers. They will buy desktop computers costing $1000 per unit, and notebook computers costing $1200 per unit. The total cost of the computers cannot exceed $80,000. Let d = # desktop, n = # notebook

a. Write an inequality that describes this situation.

$1000d + 1200n \le 80000$

b. Graph the inequality.

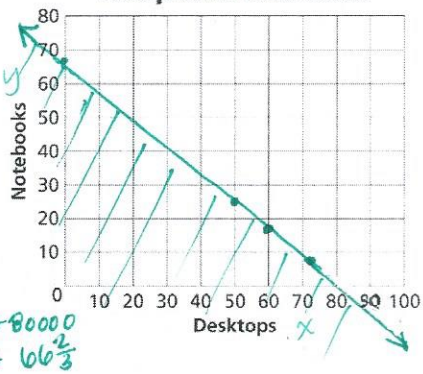
$1000x + 1200y \le 80000$

c. If the school wants to buy 50 of the desktop computers and 25 of the notebook computers, will they have enough money?

yes... $80,000 exactly.

$1200y \le -1000x + 80000$

$y \le -\frac{5}{6}x + 66\frac{2}{3}$



Key

Transformations of Functions Review

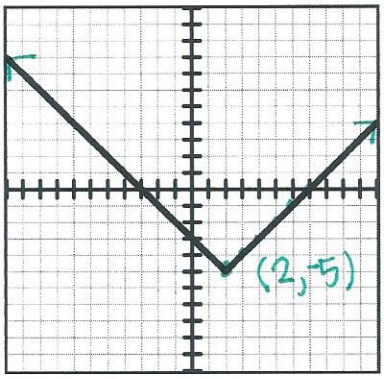
Complete the following statements given: **f(x) = a | x – h | + k**

- a is what causes the graph of the parent function to stretch or compress (more narrow or wide).
- h causes the graph of the parent function to shift left or right, the opposite of the sign.
- k causes the graph of the parent function to shift up or down, with the sign.

Applying Your Knowledge

Write the function for each of the following graphs. Use the appropriate parent function for each graph and use what you have learned about transformations with linear and absolute value functions to write these functions.

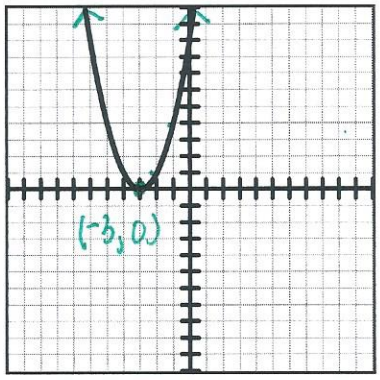
14. f(x) = $|x-2|-5$



parent: $y=|x|$

$a=1$

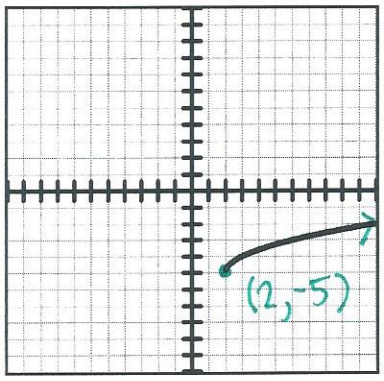
15. f(x) = $(x+3)^2$



parent: $y=x^2$

$a=1$

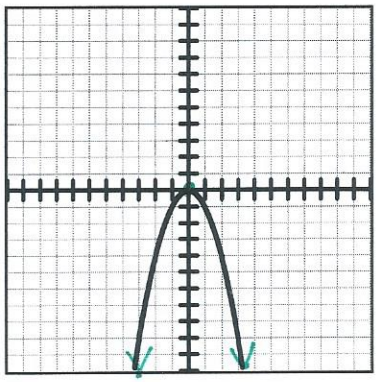
16. f(x) = $\sqrt{x-2}-5$



parent: $y=\sqrt{x}$

$a=1$

17. f(x) = $-x^2$

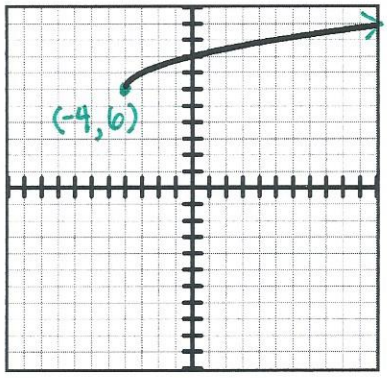


parent: $f(x)=x^2$

$a=-1$

vertex: (0,0)

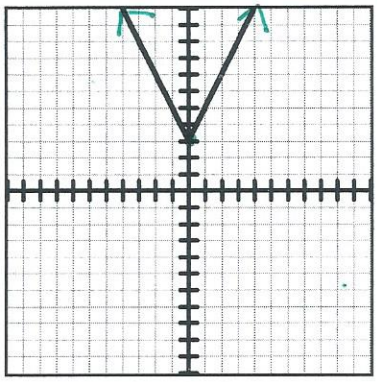
18. f(x) = $\sqrt{x+4}+6$



parent $y=\sqrt{x}$

$a=1$

19. f(x) = $2|x|+3$



parent: $y=|x|$

vertex: (0,3)

$a=2$