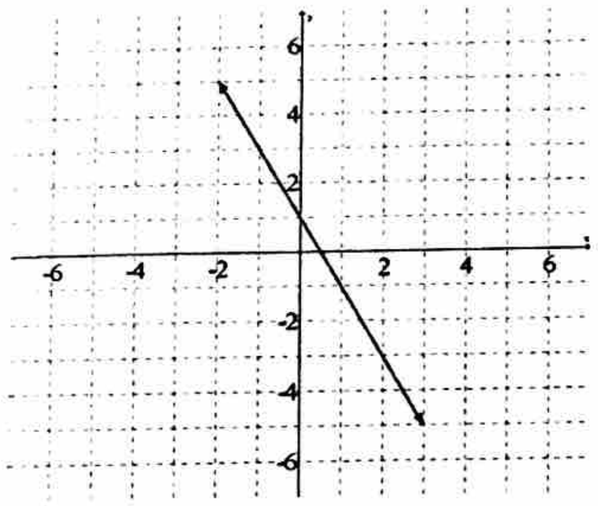
Algebra 1
REVIEW Unit 8: Quadratics

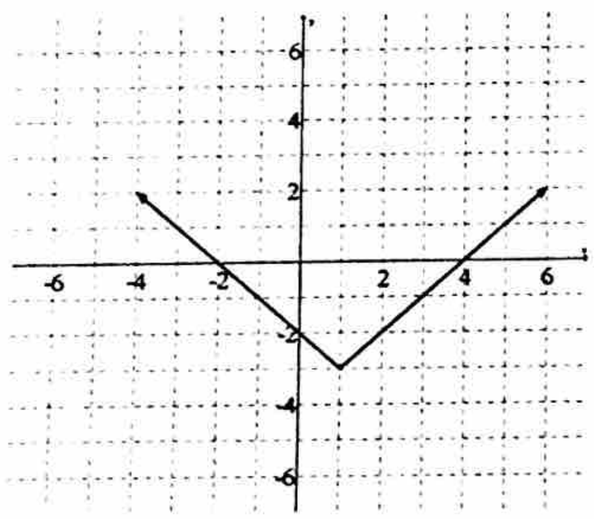
Name: Key
Date: _____ Period: ____

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

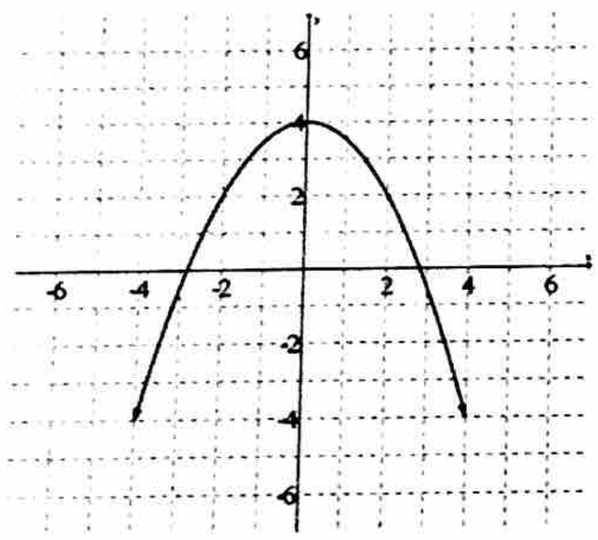
1. Which one of these graphs has a parent function of $y = x^2$? quadratic!

A.

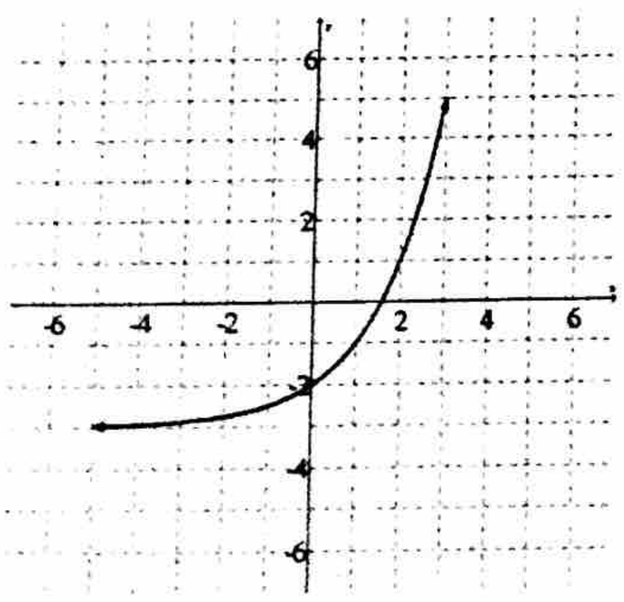




C.



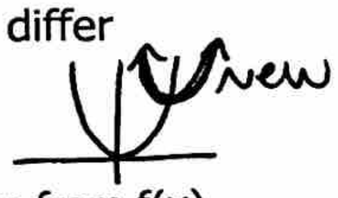
D.



2. What is the vertex of $f(x) = \frac{1}{2}(x+7)^2 - 1$?

(-7, -1)

3. How does the graph of $f(x) = x^2$ differ from the graph of $g(x) = (x-2)^2 + 8$?



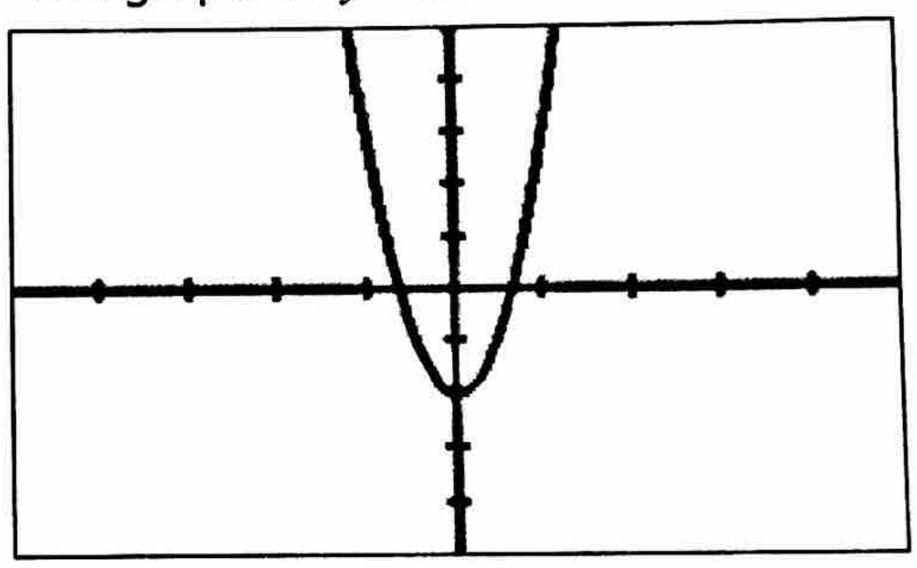
A. g(x) is translated 2 units left and 8 units up from f(x)

B. g(x) is translated 2 units right and 8 units up from f(x)

C. g(x) is translated 2 units left and 8 units down from f(x)

D. g(x) is translated 2 units right and 8 units down from f(x)

4. The graph of $y = 5x^2 - 2$ is shown below.



If the coefficient of x^2 is changed from 5 to a smaller, positive number to create a new function, how will the graph of the new function compare with the graph of the original function? pick a #

A. The new graph will be narrower than the original graph.

B. The new graph will be wider than the original graph.

C. The new graph will shift right from the original graph.

D. The new graph will shift down from the original graph.

coefficient changes → narrow/wider

5. What is the function of the graph that passes through the point (-3, 4) and has a vertex of (-1, -4)? $y=a(x-h)^2+k$

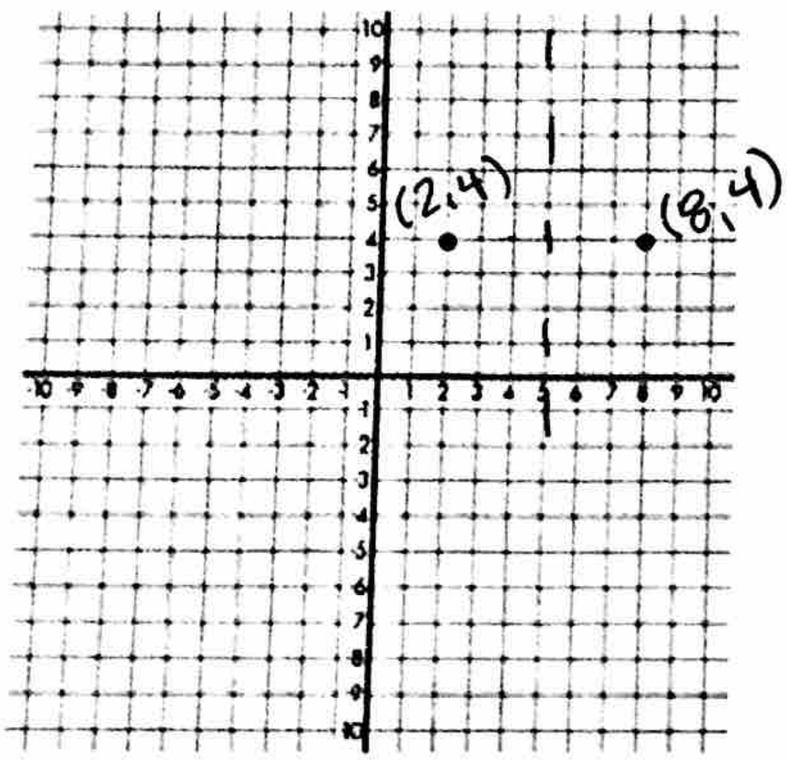
~~A.~~ $y=2(x-1)^2+4$

~~B.~~ $y=2(x+1)^2+4$ $(x-(-1))^2+(-4)$ $(x+1)^2-4$

C. $y=2(x-1)^2-4$

D. $y=2(x+1)^2-4$

6. Two points on the graph of a quadratic function are shown on the grid below.



5 is in the middle

What is the equation for the axis of symmetry of the graph of this function?

A. x=6 } Always x = #

B. x=5

C. y=5

D. y=6

7. A function is described by the equation $f(x)=x^2-3$. The replacement set for the domain is {-1, 2, 4}. Which of the following is the corresponding set for the range? (x) (y)

A {-2, 0, 6}

B {-2, 1, 13}

C {-1, 2, 4}

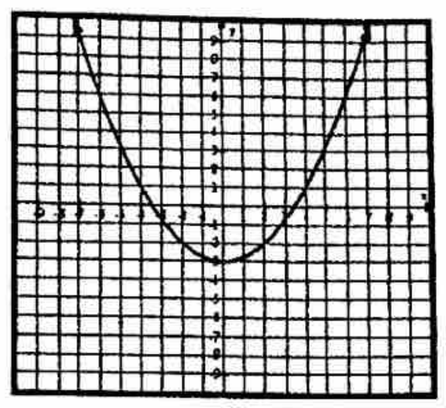
D {33, 1, 4}

$y=x^2-3$ 2nd GRAPH

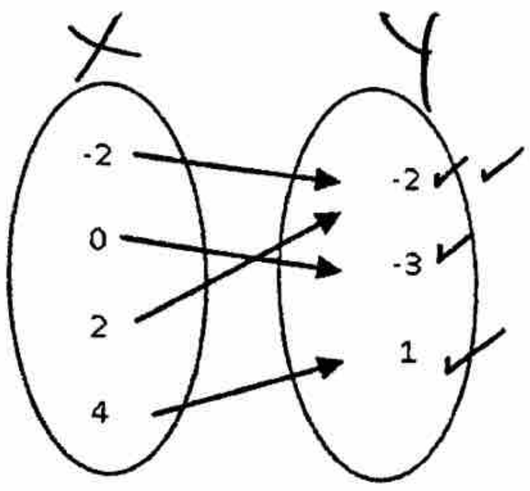
x	y
-1	-2
2	1
4	13

8. Which of the following does not represent the function $f(x)=\frac{1}{4}x^2-3$? check in calculator

A.



B.



C.

x	y
-3	-2
-1	-2.75
0	-3
3	-2

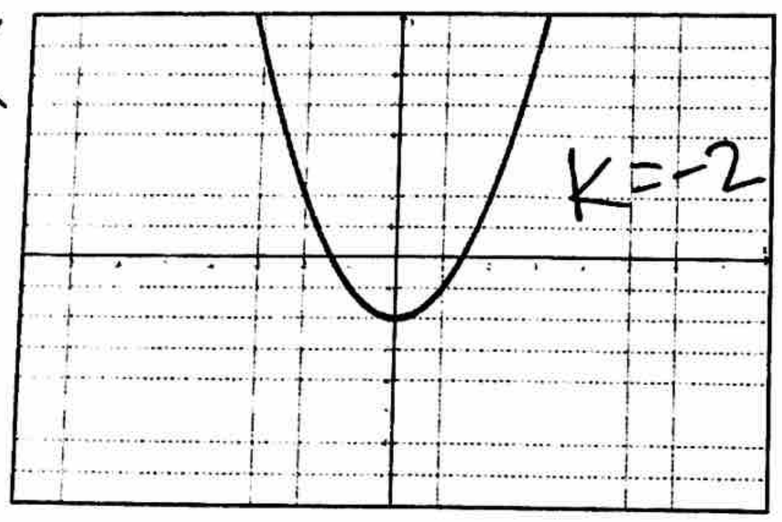
D . Y is equal to three less than the product of one-fourth and the square of x.

$y=\frac{1}{4}x^2-3$

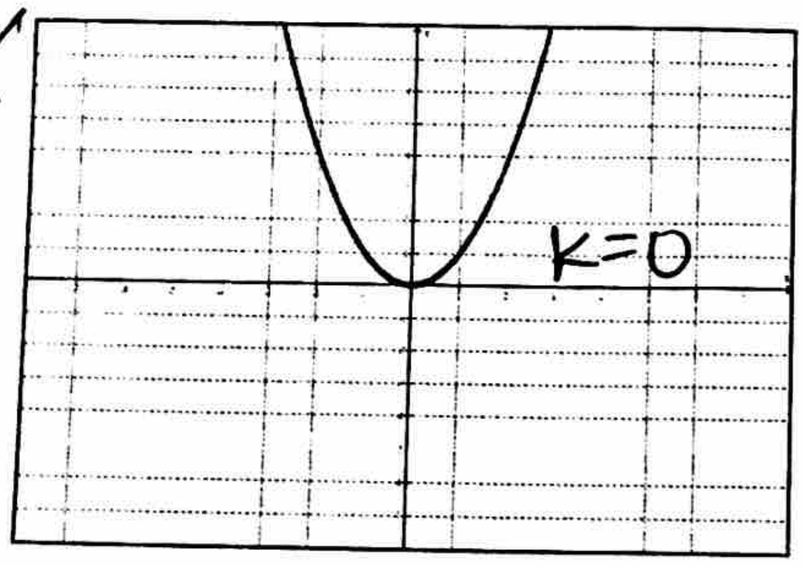
9. Which of the following does not show a function $y = x^2 + k$ when $k > -3$?

not equal

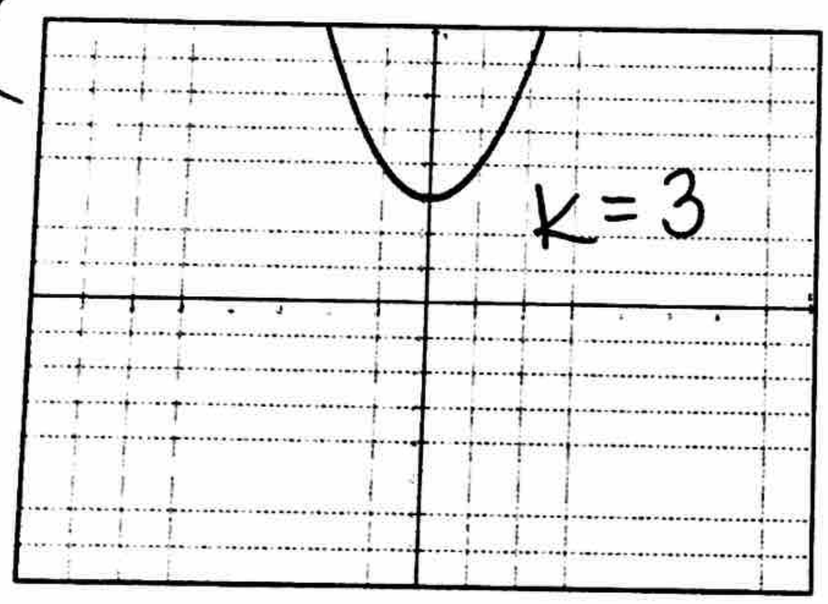
A.



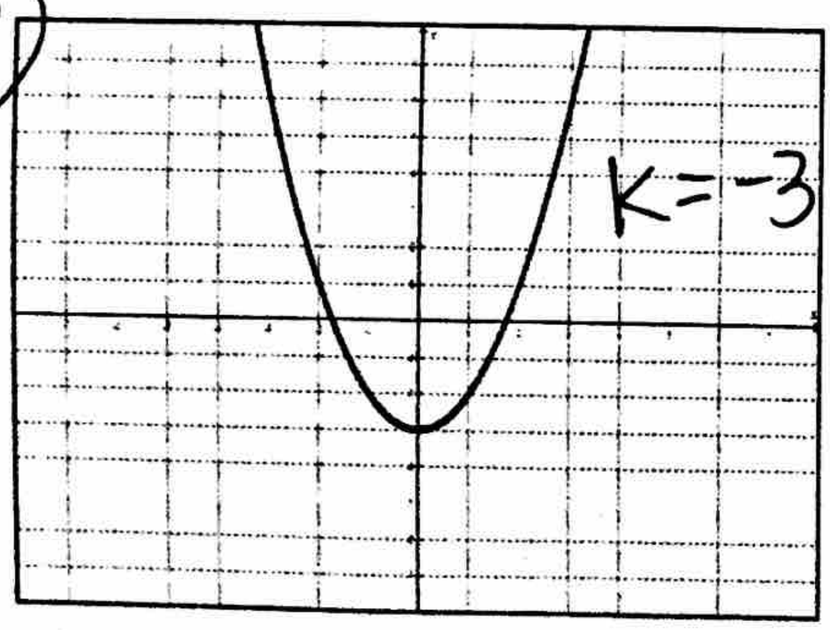
B.



C.

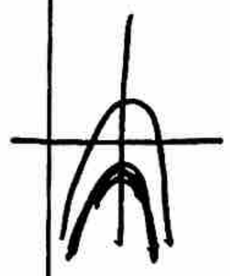


D.



10. How would the graph of $y = -x^2 + 2$ compare with the graph of $y = -x^2 - 10$?

zoom out!



A. The graph of $y = -x^2 + 2$ is 8 units above the graph of $y = -x^2 - 10$.

B. The graph of $y = -x^2 + 2$ is 12 units above the graph of $y = -x^2 - 10$.

C. The graph of $y = -x^2 + 2$ is narrower than the graph of $y = -x^2 - 10$.

D. The graph of $y = -x^2 + 2$ is wider than the graph of $y = -x^2 - 10$

coefficient didn't change

11. Which lists the functions of the form $y = ax^2$ in order from the widest to the narrowest?

FAT FRACTIONS
ignore negative

$\frac{1}{3} < \frac{3}{5}$

A. $y = \frac{3}{5}x^2, y = -\frac{1}{3}x^2, y = \frac{11}{8}x^2, y = 2x^2$

B. $y = -\frac{1}{3}x^2, y = \frac{3}{5}x^2, y = \frac{11}{8}x^2, y = 2x^2$

C. $y = 2x^2, y = \frac{11}{8}x^2, y = \frac{3}{5}x^2, y = -\frac{1}{3}x^2$

D. $y = 2x^2, y = \frac{11}{8}x^2, y = -\frac{1}{3}x^2, y = \frac{3}{5}x^2$

12. Streamers being hung in the hallway makes a parabola shape that has the equation $y = \frac{1}{2}(x-6)^2 + 10$ where x and y are measured in feet. What is the minimum distance the streamers hang above the floor?

↕

A. 10
B. 6
C. 16
D. 20

vertex (6, 10)
Minimum

#13-15. Answer the following questions based upon the parabola given by the graph $f(x) = -2(x+5)^2 - 3$

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

$(-5, -3)$

13. What is the vertex of the equation?

A. (5, -3) C. (2, -5)

B. (-5, -3) D. (-2, 5)

14. What is the equation of the axis of symmetry?

$x =$ x value of vertex

A. $x = 2$

B. $x = \frac{1}{2}$

C. $x = -3$

D. $x = -5$

15. The range of the function is...

max.

A. All real numbers

B. $y \geq -3$

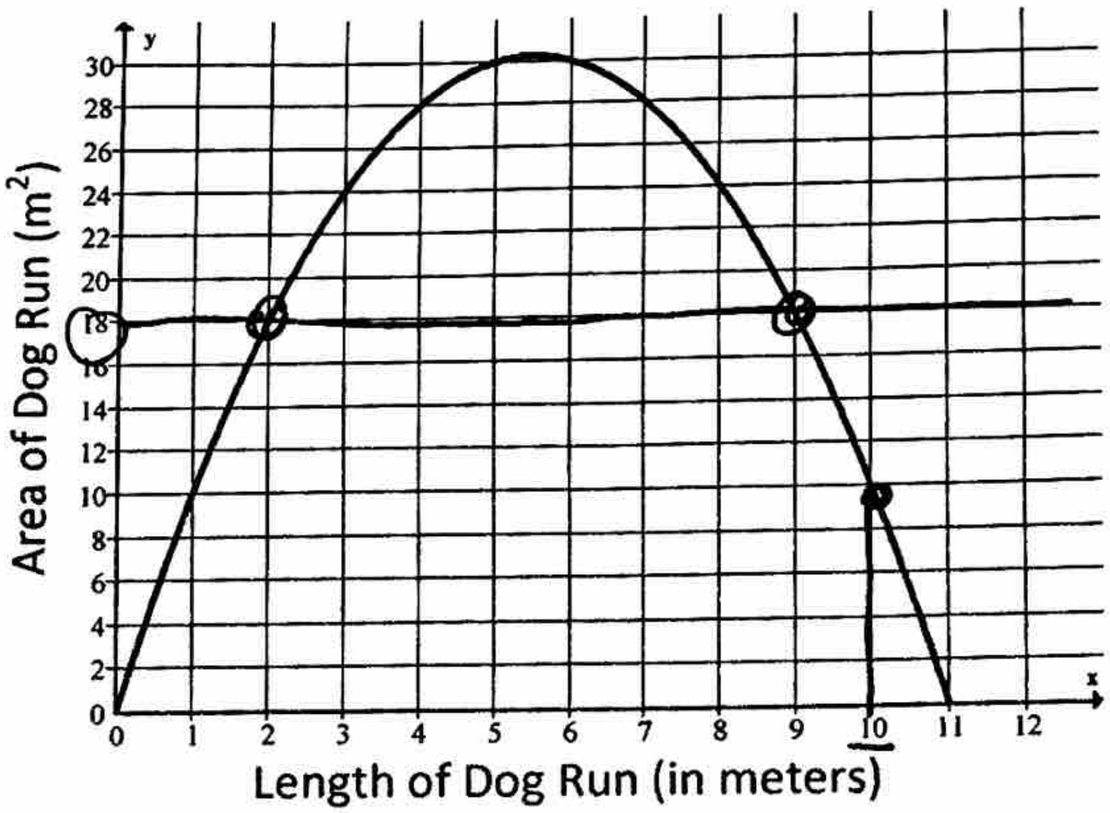
C. $y \leq -5$

D. $y \leq -3$

$y \leq$ max. y-value

#16-17.

The owner of a kennel that raises Saint Bernards needs to build a dog run for a new litter of puppies. He has 22 meters of chain link fence to enclose all four sides. The function of the area of the dog run is given by $A = 11l - l^2$, where l is the length of the dog run. The following is a graph of the situation.



$f(x) = 4$

16. Find the value of $f(10)$ $x = 10$

$10\ m^2$

17. Find $f(x) = 18$ $y = 18$

$x = 2\ m$

$x = 9\ m$