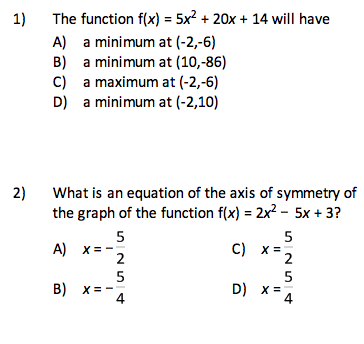
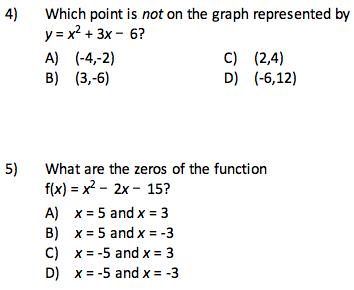
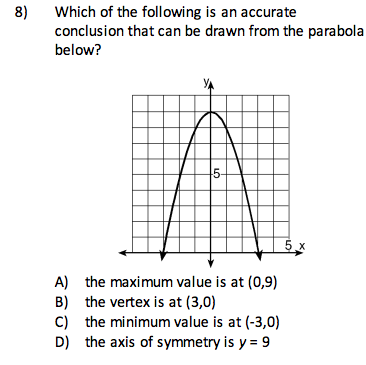
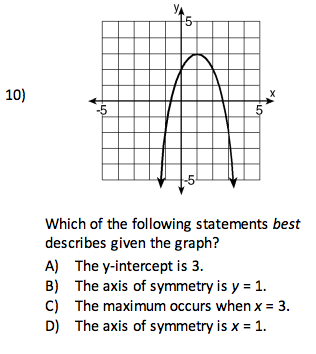
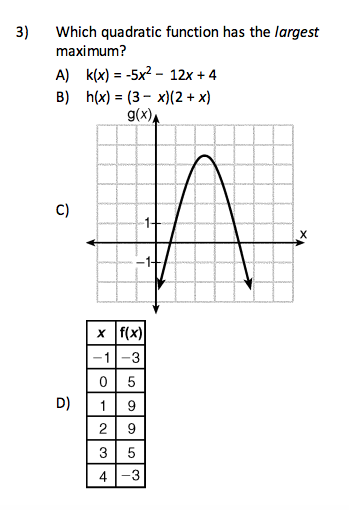
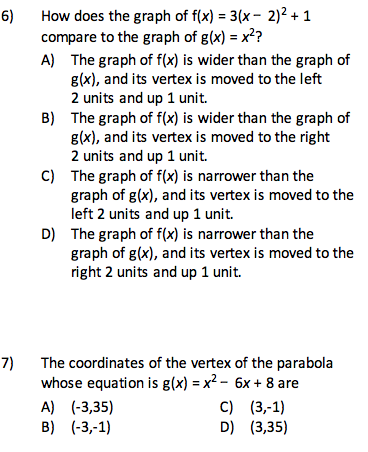
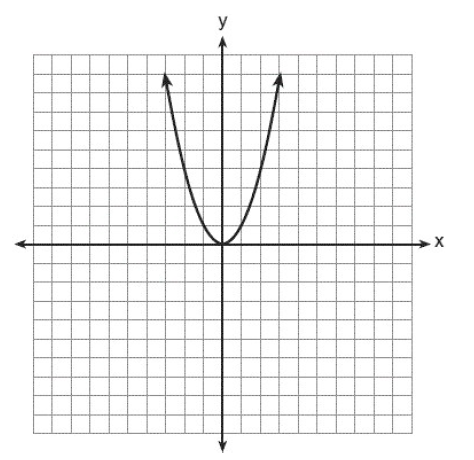
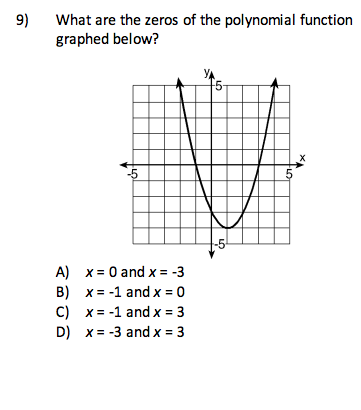
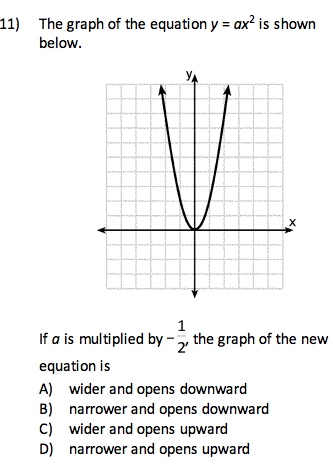
Name:

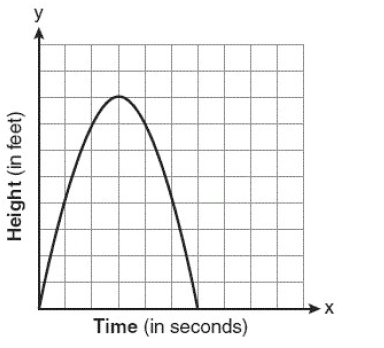


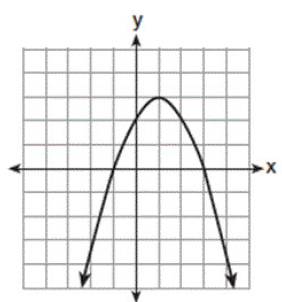
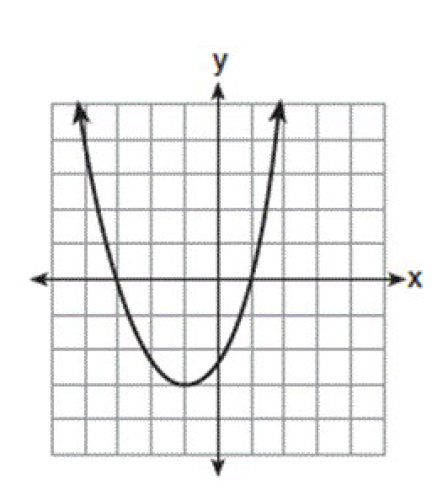
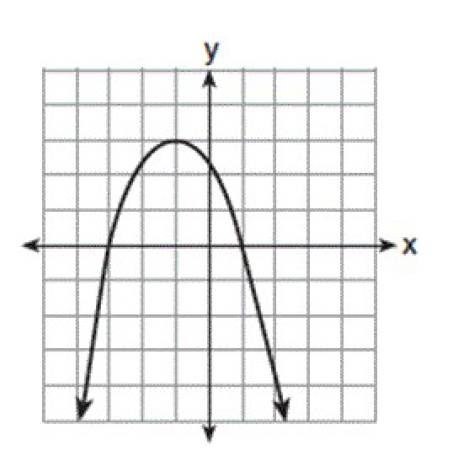


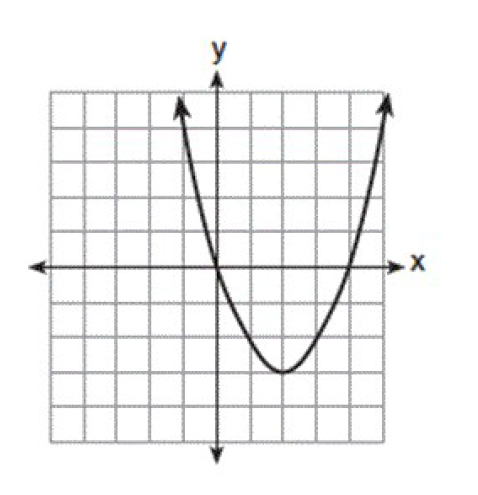
12. The graph of the equation y = x2 is shown below.

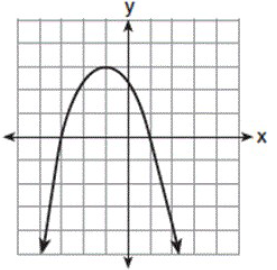
Which statement best describes the change in this graph when the coefficient of x2 is multiplied by 4?

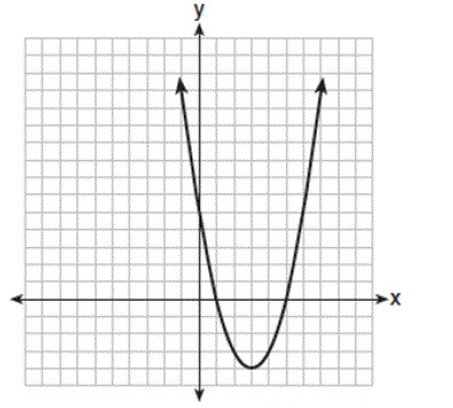
1. The parabola becomes wider.
2. The parabola will shift up 4 units.
3. The parabola becomes narrower.
4. The parabola will shift right 4 units.

13. The graph below represents the parabolic path of a ball kicked by a young child. What are the vertex and the axis of symmetry for the parabola?

1. Vertex: (3, 8), axis of symmetry: x = 3
2. Vertex: (8, 3), axis of symmetry: x= 3
3. Vertex: (3, 8), axis of symmetry: y = 3
4. Vertex: (8, 3), axis of symmetry: y= 3
5. Which parabola has an axis of symmetry of x = 1?
6. c.





1. d.
2. The equation *y* = *a*x2 + *b*x + *c* is graphed on the set of axes below.

Based on the graph, what are the roots of the equation *a*x2 + *b*x + *c* = 0?

1. 0 and 5 c. 1 and 5
2. 1 and 0 d. 3 and -4
3. What is the vertex of the graph of the equation

y = 3x2 + 6x + 1?

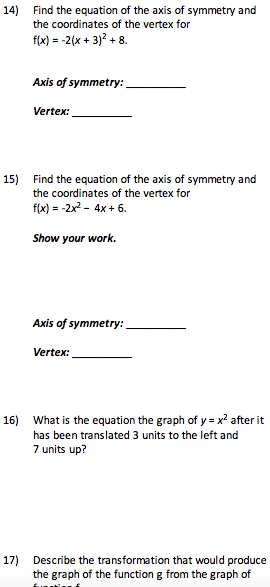
1. (-1, -2) c. (1, -2)
2. (-1, 10) d. (1, 10)
3. What is the solution of the system of equations

*y* = x + 5 and *y* = *x*2 + 5?

a. (0, 5) and (1, 6) c. (2, 9) and (– 1, 4)

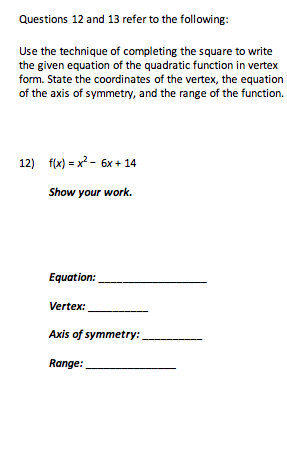
b. (0, 5) and (–1, 6) d. (–2, 9) and (–1, 4)

1. The graph of a parabola is represented by the equation *y* = *ax*2 where *a* is a positive integer. If *a* is multiplied by –2, the new parabola will become
   1. narrower and open downward
   2. wider and open downward
   3. narrower and open upward
   4. wider and open upward

For 19 and 20, convert to vertex form using

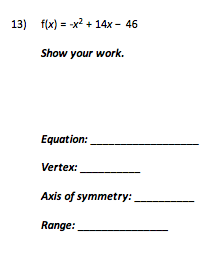
21.

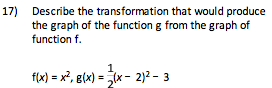
completing the square.



19.

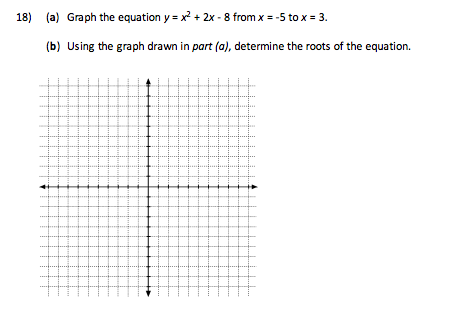
22.



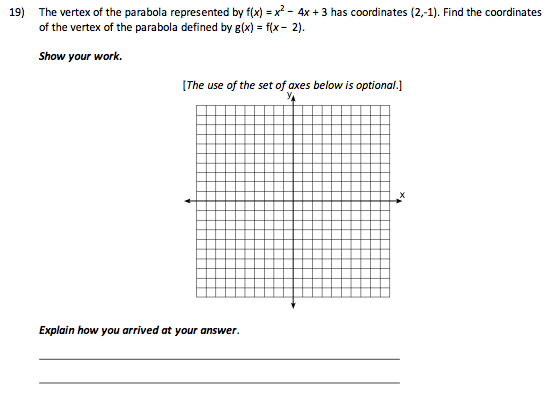
20.

24.

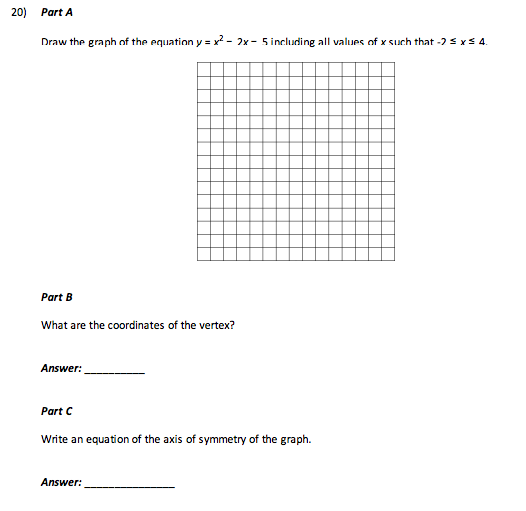
23.



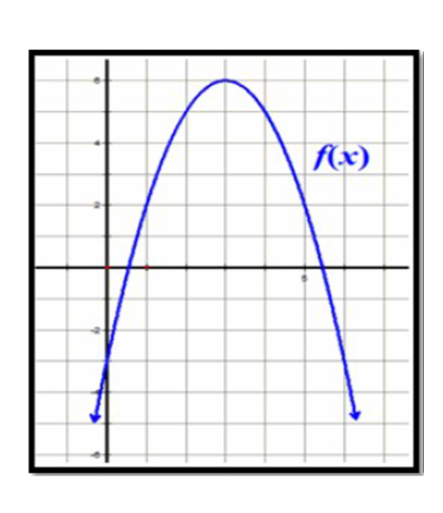
25.



26.



27.

1. Find the roots of the equation x2 + x = 8 – x graphically.
2. The function p(x) includes the point (0, 5). What are the coordinates of the point after the shift of p(x) – 2?
3. The function m(x) includes the point (-3, -4). What are the coordinates of the point after the shift of m(x + 4)?
4. Alicia and Brent were comparing the vertex of two quadratic functions. Brent stated that *f*(*x*) and *g*(*x*) have different maximum values. Alicia thinks that both functions have a maximum of 6. Is either of them correct? Justify your answer.

g(x) = –x2 + 3x + 4

1. Rewrite the equation *y* = *x*2 – 8*x* – 2 in vertex form by completing the square. Then identify the vertex of the parabola.
2. The path of a rocket fired during a fireworks display is given by the equation h(t) = 64t – 16t2, where *t* is the time, in seconds, and *h(t)* is its height, in feet.

(a) What is the maximum height, in feet, the rocket will reach? *[only an algebraic solution will be accepted]*

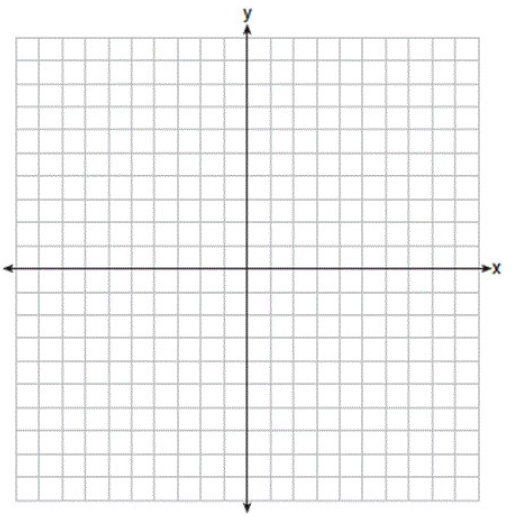
(b) How many seconds will it take the rocket to hit the ground? *[only an algebraic solution will be accepted]*

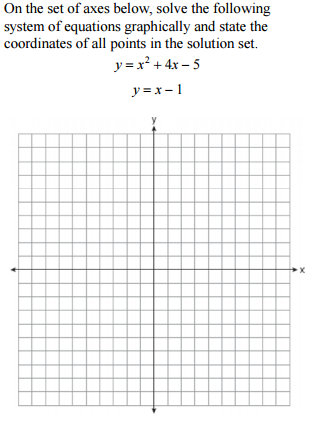
1. Solve the following system of equations algebraically:

*y* = *x*2 – 6*x* + 9

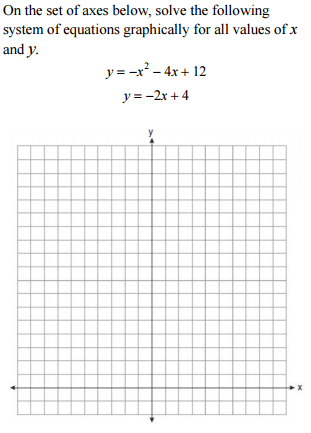
*y* = –9*x* + 19

1. Let *f*(*x*) = *x*2 + 4*x* – 5 and *g*(*x*) = 2*x* + 3. On the set of axes below, draw the graphs of *y* = *f*(*x*) and *y* = *g*(*x*). Using this graph, determine and state all coordinatesfor which *f*(*x*) = *g*(*x*).

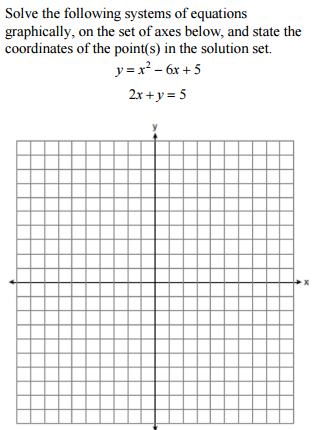




36.



37.



38.

39. Solve and check the following system

y =

y =

40. Solve and check the following system

y =

y =