

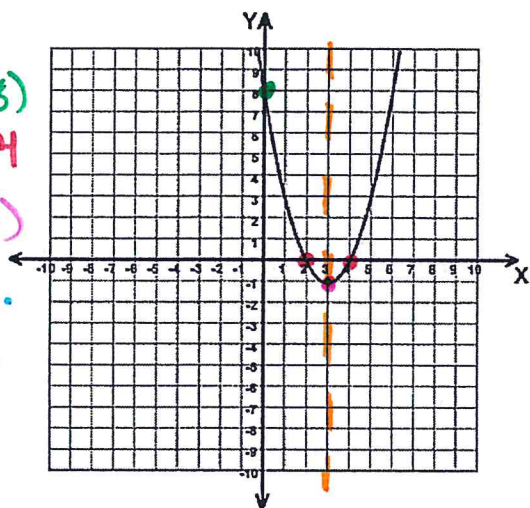
Part 2 – This is part of your exam grade

Quadratic Functions

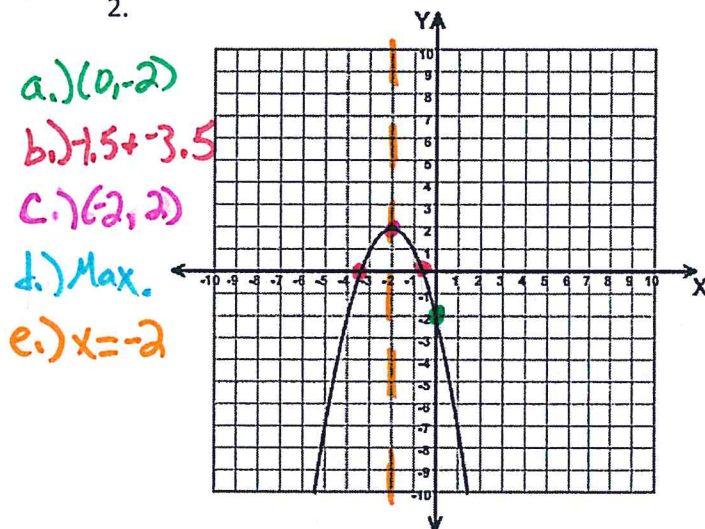
For 1 – 4,

- a) Find and label the y-intercept.
- b) Find and label the x-intercept(s)/zero(s)/root(s)/solution(s).
- c) Identify and label the vertex.
- d) Is the vertex a maximum or a minimum?
- e) Draw in the axis of symmetry and write the equation for it.

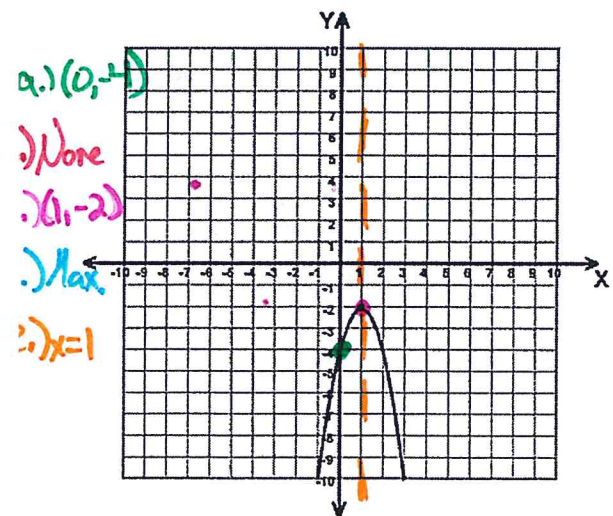
1.



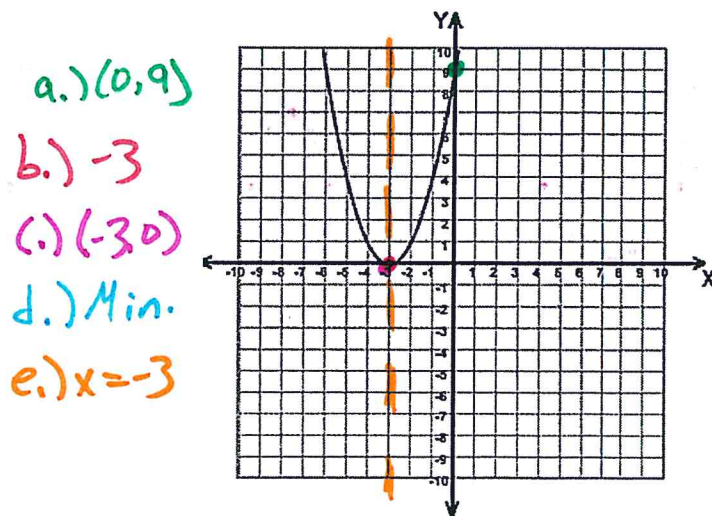
2.



3.



4.



Factor each expression for 5 – 8.

5. $6x^5 + 3x^4 - 9x^2$

$$3x^2(2x^3 + x^2 - 3)$$

6. $49r^2 - 144$

$$y = 1(7r + 12)(7r - 12)$$

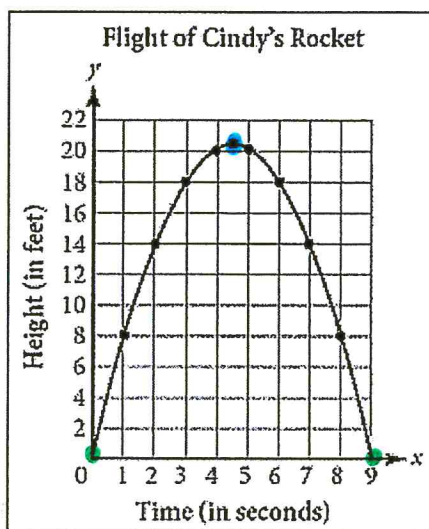
7. $2y^2 - 2y - 112$

$$y = 2(x - 8)(x + 7)$$

8. $12d^2 - 8d + 1$

$$y = 1(2x - 1)(6x - 1)$$

The following is a graph of the path of a rocket after it is launched.



9. Identify and explain the real world meaning of the following points. Height is in feet and time is in seconds.

(4.5, 20.5)
How long it took rocket to reach max. height.

a) Vertex

0 and 9

b) x-intercept(s)

Rocket flew for 9 secs.

c) y-intercept(s)

Rocket started 0 ft. off the ground.

10. How long does it take for the rocket to reach the ground? Explain your answer.

9 seconds

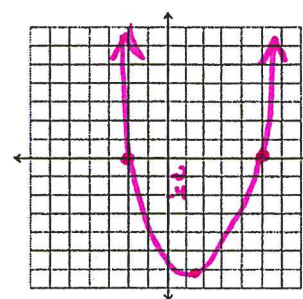
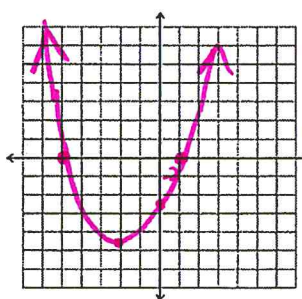
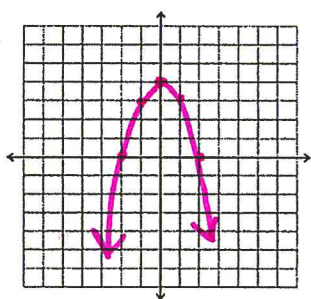
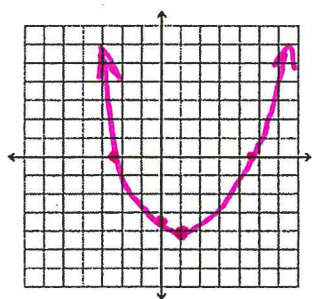
For 11 - 14, graph each quadratic function.

11. $y = \frac{1}{3}(x-1)^2 - 4$

12. $y = -x^2 + 4$

13. $y = x^2 + 4x - 5$

14. $y = (x-5)(x+2)$



15. Explain what can be determined by looking at each form of a quadratic function.

a) Standard $y = ax^2 + bx + c$

y-int. and Min./Max.

b) Factored $y = (x-a)(x-b)$

Zeros/Solutions + Min./Max.

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

Vertex + Min./Max