

Name: _____

Date: _____

Vertex form of a Quadratic Function:

Example Complete the table for each of the following functions:

$$f(x) = 2(x - 3)^2 - 4$$

1. y –intercept	2. Number of x –intercepts	3. Equation of the axis of symmetry
4. Coordinates of the vertex	5. Maximum or minimum? Value?	6. Domain and Range

$$f(x) = -2(x + 5)^2 + 7$$

7. y –intercept	8. Number of x –intercepts	9. Equation of the axis of symmetry
10. Coordinates of the vertex	11. Maximum or minimum? Value?	12. Domain and Range

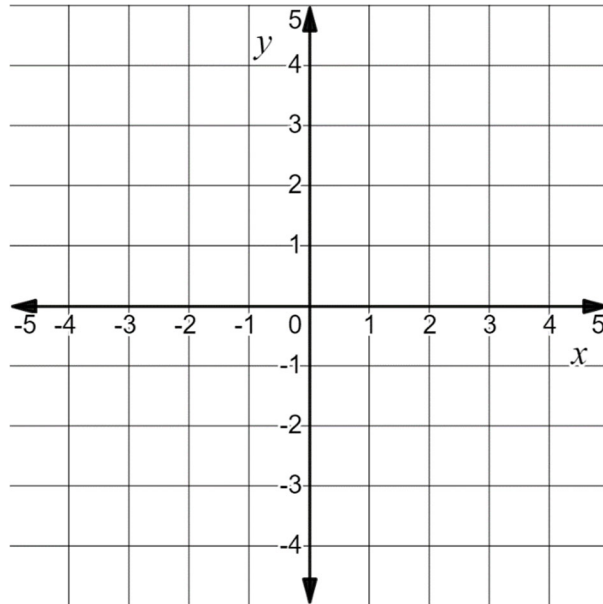
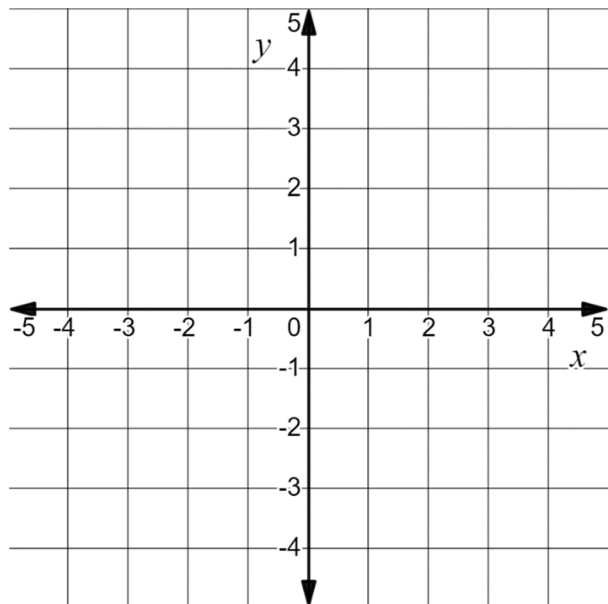
$$f(x) = \frac{2}{3}(x - 6)^2 + 7$$

13. y –intercept	14. Number of x –intercepts	15. Equation of the axis of symmetry
16. Coordinates of the vertex	17. Maximum or minimum? Value?	18. Domain and Range

Example Predict the number of zeros of each of the following functions:

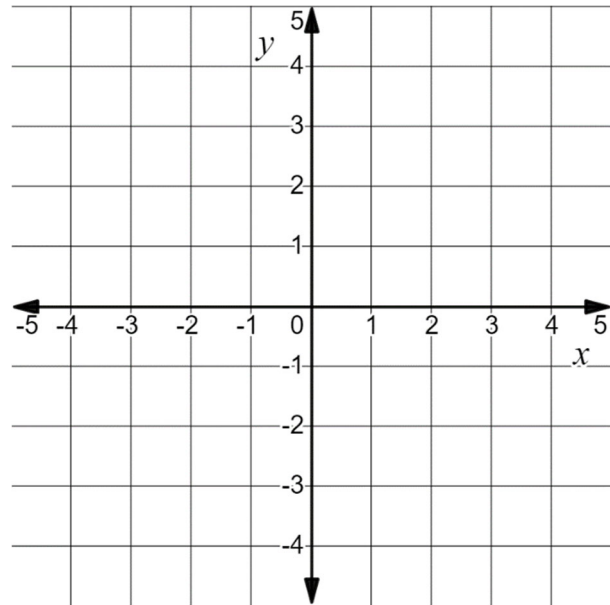
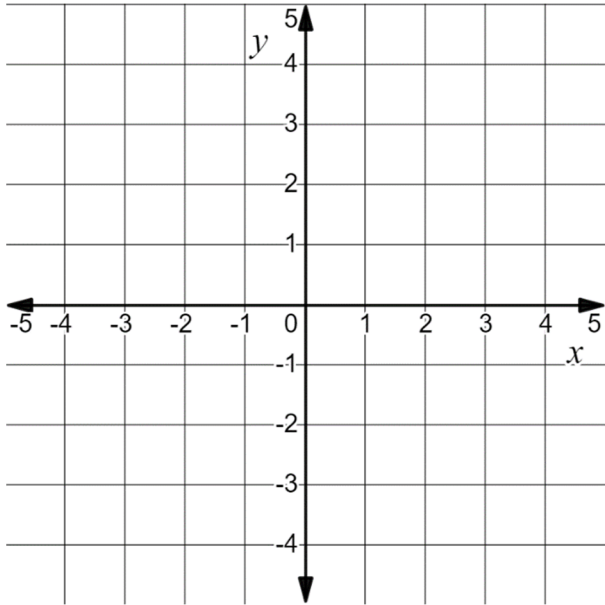
a. $y = (x - 4)^2$

b. $g(x) = -2(x + 4)^2 - 7$

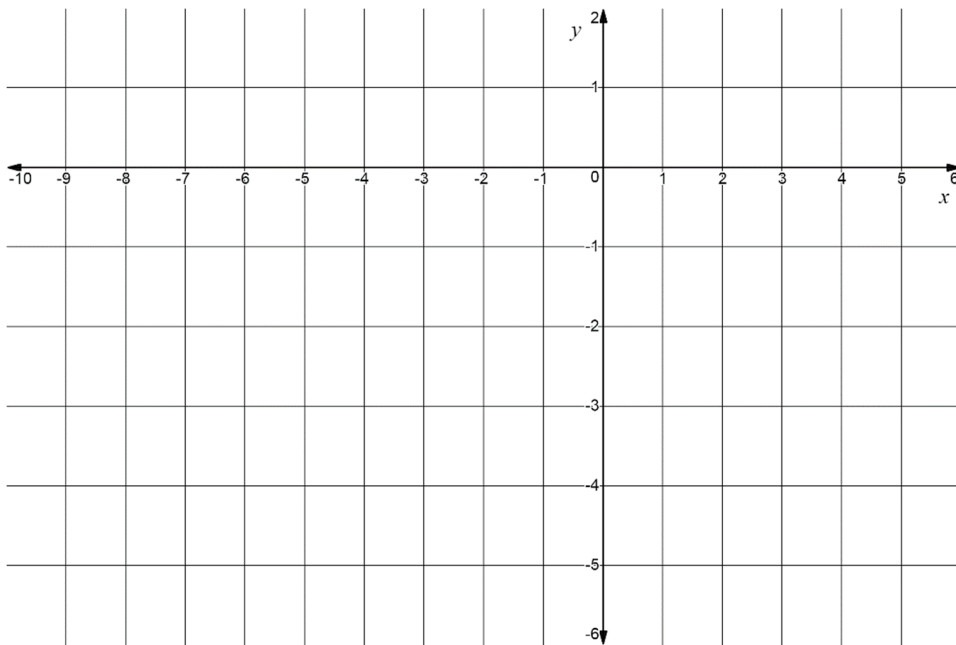


c. $h(x) = 3(x - 7)^2 - 5$

d. $m(x) = x^2 + 2$



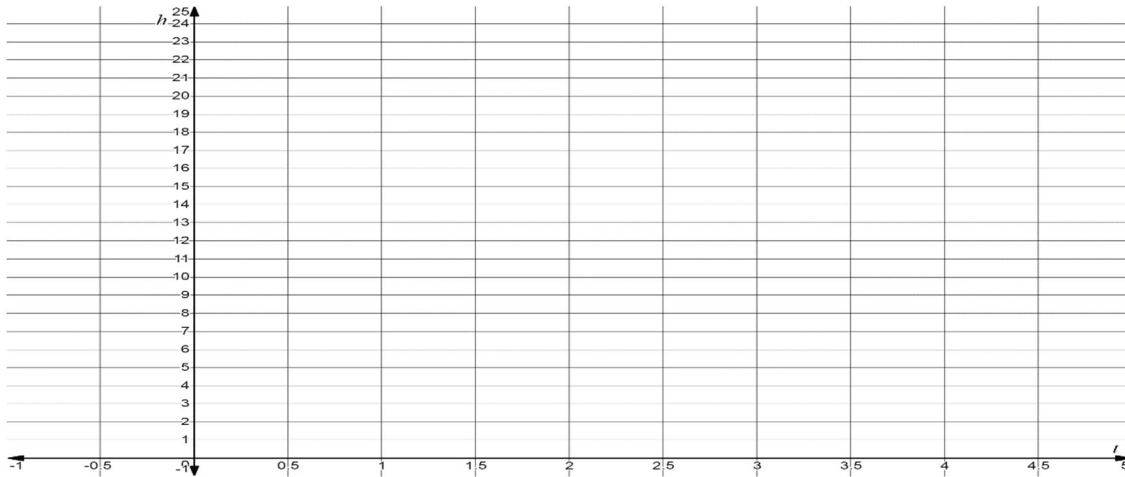
Example Sketch the graph of $f(x) = \frac{1}{3}(x + 6)^2 - 5$. Clearly show five points on the graph.



x	y

Example A goalkeeper kicked a soccer ball from the ground. It reached a maximum height of 24.2 m after 2.2 seconds. The ball was in the air for 4.4 seconds.

- a. Draw a picture to represent this situation.



- b. Write a quadratic function to model this situation.

- c. How high was the ball in the air after 3 sec?