

17. A manufacturer determines that the number of drills it can sell is given by the formula

$$D = -3p^2 + 180p - 285 \text{ where } p \text{ is the price of the drills in dollars.}$$

a) At what price will the manufacturer sell the maximum number of drills?

b) What is the maximum number of drills that can be sold?

18. A town is planning to fence around a new playground that is to be 15 feet longer than the width. The playground equipment calls for an area of 250 square feet. Find the dimensions of the playground.

19. The path of a baseball after it has been hit is modeled by the function

$$h = -0.0032d^2 + d + 3$$

where h is the height in feet of the baseball and d is the distance in feet the baseball is from home plate.

a. What was the height of the ball at initial contact?

b. At what distance does the ball strike the ground?

c. How far away from home plate does the ball reach its maximum height?

d. What is the ball's maximum height?

e. What is the height of the ball after 200 feet?

20. $y = -(x - 2)^2 + 9$

a) Graph. (**Graph at least five points**)

b) What is the vertex?

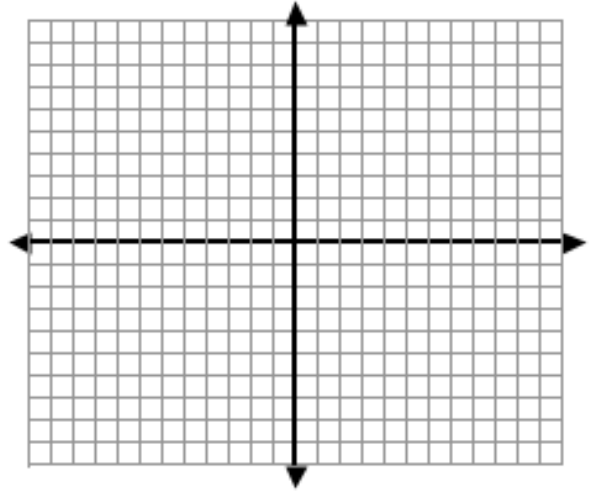
c) What is the equation for the axis of symmetry?

d) Is the vertex a min or a max?

e) List the transformations for the graph

f) Write the coordinate of the y -intercept.

g) Write the coordinate(s) of the x -intercept(s).



21. $y = 2x^2 + 8x - 1$

a) Graph. (**Graph at least five points**)

b) What is the vertex?

c) What is the equation for the axis of symmetry?

d) Is the vertex a min or a max?

e) List the transformations for the graph

f) Write the coordinate of the y -intercept.

g) Write the coordinate(s) of the x -intercept(s).

