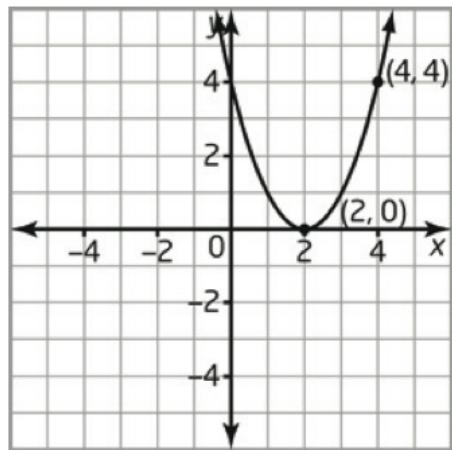


## Quadratic Relations - Analysis and Applications

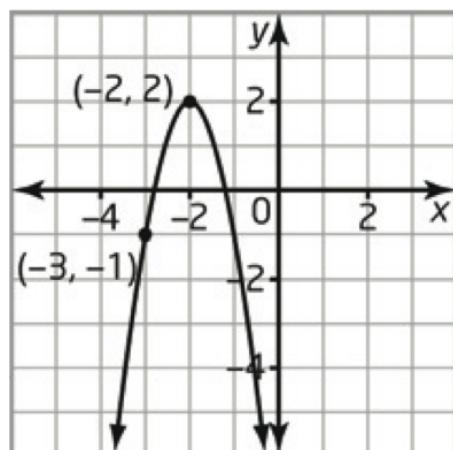
### Example 1

Write an equation for each parabola.

a)



b)



2. At a fireworks display, a firework is launched from a height of 2 m above the ground and reaches a maximum height of 40 m at a horizontal distance of 10 m.

a) Determine an equation to model the flight path of the firework.

b) The firework continues to travel an additional 1 m horizontally, after it reaches the maximum height, before it explodes. What is its height when it explodes?

c) At what other horizontal distance is the firework at the same height as in part b)?