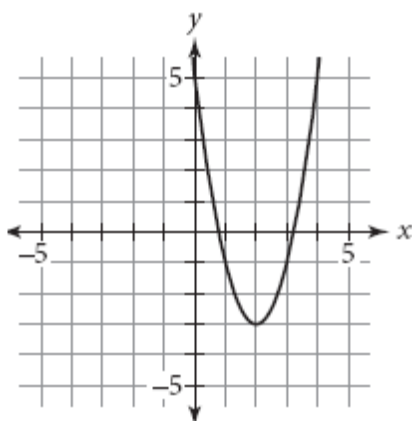


Name: \_\_\_\_\_

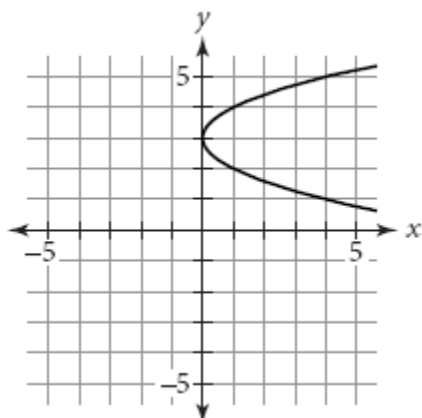
## Parabolas

- 1) Write an equation in standard form for each parabola.

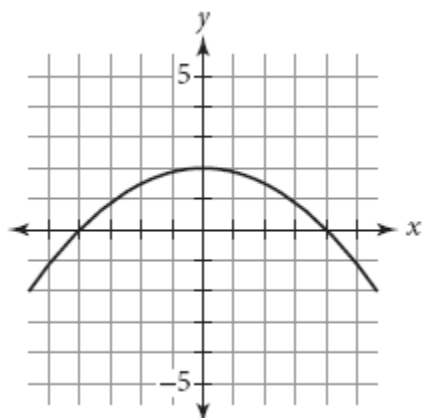
1)



2)



3)



- 2) Solve the problem by finding the coordinates of the vertex of a parabola.

The height of a projectile shot straight upward with an initial velocity of 50 m/s from the top of a 60 m tall building is given by the function  $h = -4.9t^2 + 50t + 60$ .

- i. How long does it take the projectile to reach its maximum height?
- ii. What is the maximum height?

- 3) Find the vertex, focus, equation of the axis of symmetry and directrix.

1)  $y = -2x^2$

2)  $x = y^2$

3)  $(x - 3)^2 = 8(y + 1)$

4)  $y^2 - 8y + 3 = 7 - x$

5)  $0.5(x - 4)^2 = 6.5(y - 2)$

6)  $(y + 6)^2 = 4(x - 5)$