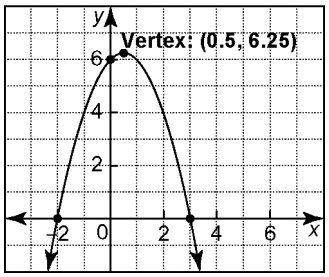
Name: _____ Date: _____

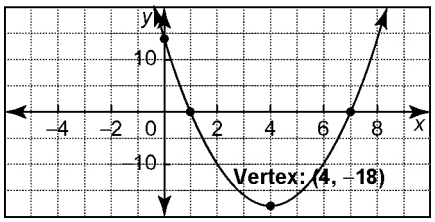
Section 5.5 The *x*-Intercepts of a Quadratic Relation

1. Find the *x*-intercepts of each quadratic relation.

a)

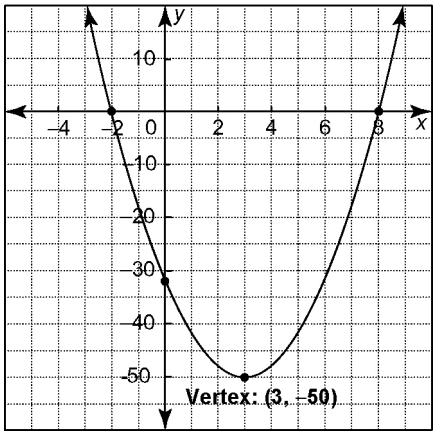


b)

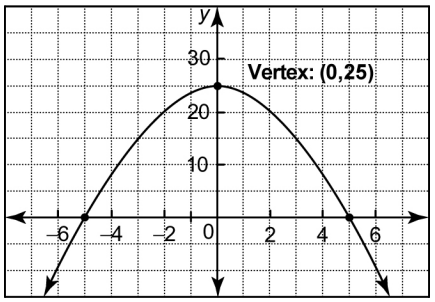


2. Find the zeros of each quadratic relation.

a)



b)



3. Find the zeros of each quadratic relation.

a) $y = (x - 1)(x + 2)$
b) $y = 3(x + 7)(x - 5)$
c) $y = -2x(x - 6)$
d) $y = -(x + 6)(x - 9)$
e) $y = 4(x + 8)(x - 2)$
f) $y = 6(x - 6)(x + 6)$

4. Find the zeros by factoring. Check by graphing.

a) $y = x^2 + 8x + 15$
b) $y = x^2 - 2x - 8$
c) $y = 2x^2 - 18$
d) $y = 3x^2 - 12x - 36$
e) $y = -x^2 + 4x + 5$
f) $y = 6x^2 - 24$

5. Find the zeros by factoring.

a) $y = 0.5x^2 + 2x - 6$
b) $y = 1.5x^2 - 9x - 24$

6. Which relation has more than one *x*-intercept? How do you know?

a) $y = -3(x + 2)^2 + 1$
b) $y = 2(x + 5)^2 + 2$

Name: _____ Date: _____

7. Given each relation in vertex form, express the relation in standard form and in intercept form.

a) $y = (x + 3)^2 - 1$
b) $y = -2(x + 1)^2 + 32$
c) $y = 4(x - 3)^2 - 100$

8. A rock was thrown from a cliff. Its path can be modelled by the relation $h = -0.5d^2 + d + 12$, where h is the height of the rock above the ground and d is the horizontal distance, both in metres.

a) How high is the cliff?
b) Write the relation in intercept form.
c) Determine the zeros of the relation.
d) At what horizontal distance did the rock hit the ground?
e) Graph the relation.

9. A soccer ball was kicked from ground level. It followed a path given by the relation $h = -0.25d^2 - 5d$, where h is the height of the ball above the ground and d is the horizontal distance, both in metres.

a) Write the relation in intercept form.
b) Find the zeros of the relation.
c) How far from the kicker did the ball land? Explain.

