Foundations 110 **Quadratics Test Review**

1. What is the y-intercept for $y = 2x^2 + 6x + 8$?
2. What is the y-intercept for $y = 3(x + 4)(x – 2)$?
3. What are the x-int(s) and y-int for the following quadratic equation: $f(x) = x^2 + 2x – 63$?
4. Two points are given on a graph (-1,4) and (-5,4). What is the axis of symmetry?
5. What is the x-int(s), y-int, axis of symmetry, and vertex for the quadratic $g(x) = 2x^2 – 5x – 3$?
6. Solve for the roots of the following functions:
    a. $y = 2x^2 + 8x$
    b. $y = x^2 – 25$
    c. $f(x) = -x^2 + 16$
    d. $y = x^2 – 10x + 16$
    e. $g(x) = x^2 + 3x – 18$
    f. $f(n) = 2n^2 – 3n – 14$

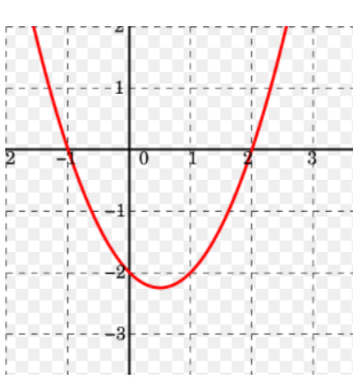
7. Given the quadratic function $y = -3x^2 + 6x + 45$ find the following pieces of information and graph the function.
    a. x-intercept
    b. y-intercept
    c. axis of symmetry
    d. vertex
    e. max/min
    f. domain
    g. range

8. A quadratic function has x-intercepts (3, 0) and (8, 0) with a y-intercept of (0, 12). What would be the equation in factored form that could be made from this scenario? What would it be in standard form?

9. Solve $x^2 + 5x – 8 = 0$ using the quadratic formula.
10. Solve $0.25x^2 – 0.3x + 0.09 = 0$ using the quadratic formula.

11. Solve $4x^2 – 12x – 3 = 0$ using the quadratic formula and state as an exact value.
12. Solve $5x^2 + 6x + 7 = 0$ using the quadratic formula and state as an exact value.

13. For the graph to the right, find all of the following:
    a. Factored Form
    b. Standard Form
    c. x-intercept
    d. y-intercept
    e. axis of symmetry
    f. vertex
    g. max/min
    h. domain
    i. range



14. A ball is hit off the end of a baseball bat. The height of the ball, h(t), in feet, could be modelled by the function

$$h(t) = -16t^2 + 160t$$

where *t* represents the time, in seconds, after the ball was hit. Using a graphing calculator, solve the following:

a) How long was the ball in the air?
b) How high was the ball after 2 seconds?
c) What was the maximum height of the ball?