Chapter 4 Study Guide - Algebra 2

Section 4.1 - Graphing Quadratic Functions

For #1-4, find the y-intercept, the equation for the axis of symmetry, and the coordinates for the vertex.

1)
$$f(x) = x^2 + 5x + 12$$

<u>y-int: 12</u>

Aos: x=-2.5

Vertex: (-2.5, 5.75)

3)
$$f(x) = -x^2 + 3x - 1$$

y-int: -1

AOS: x=1.5

Vertex: (1.5,1.25)

4-int: 15

A o S:

4)
$$f(x) = -3x^2 + 12x - 1$$

AoS: x = 2

vertex: (2,11)

Determine whether each function has a maximum or a minimum. Then, find the maximum/minimum value.

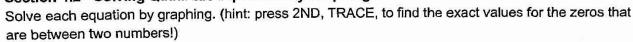
5)
$$f(x) = -x^2 + 3x - 1$$

Maximum

6)
$$f(x) = -3x^2 - 4x + 5$$

Maximum

Section 4.2 - Solving Quadratic Equations by Graphing



$$7) x^{2} - x - 20 = 0$$

$$X = -4$$

$$X = 5$$

$$\begin{array}{c} x = -1.3 \\ x = 2.8 \end{array}$$

Section 4.3 - Solving Quadratic Equations by Factoring

Solve each equation by factoring.

9)
$$2x^2 - 2x - 24 = 0$$

9)
$$2x^{2}-2x-24=0$$

 $(2x-8)(x+3)$
OR
 $(x-4)(2x+6)$
 $(x-4)(2x+6)$

$$X = -3$$

 $X = 4$

10)
$$2x^2 - 5x - 3 = 0$$

$$X=3$$

 $X=-1/2$