MAT 055
Practice Test Chp 18
Version A

Name_____

Date_____

Campus_____

All answers are to be in simplest form. A scientific calculator may be used. No notes, no books, no homework may be used. This is a practice test consisting of basic concepts presented. It reflects what could be on the actual test. <u>Students are encouraged to review all of the material presented</u>.

Find the vertex of the parabola.

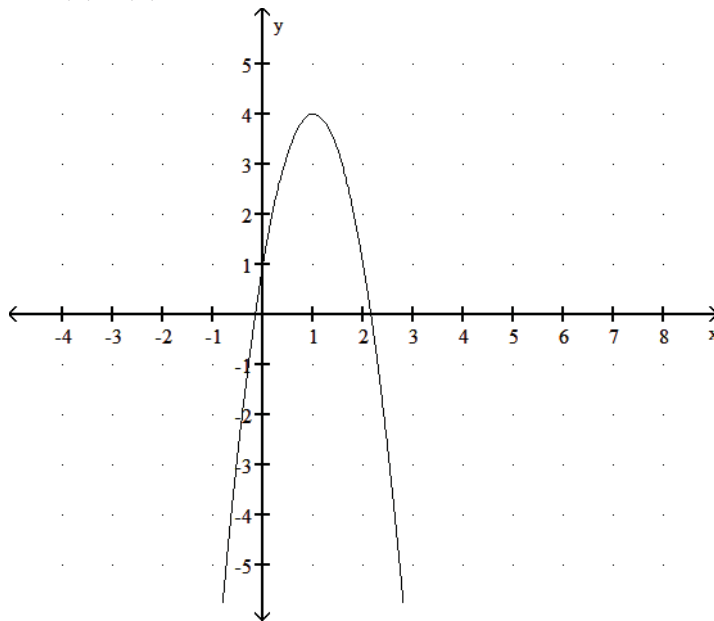1) $f(x) = \dfrac{1}{3}x^2 - \dfrac{2}{3}x - \dfrac{11}{3}$ Vertex:(_____,_____)

2) $f(x) = 3x^2 - 2$ Vertex:(_____,_____)

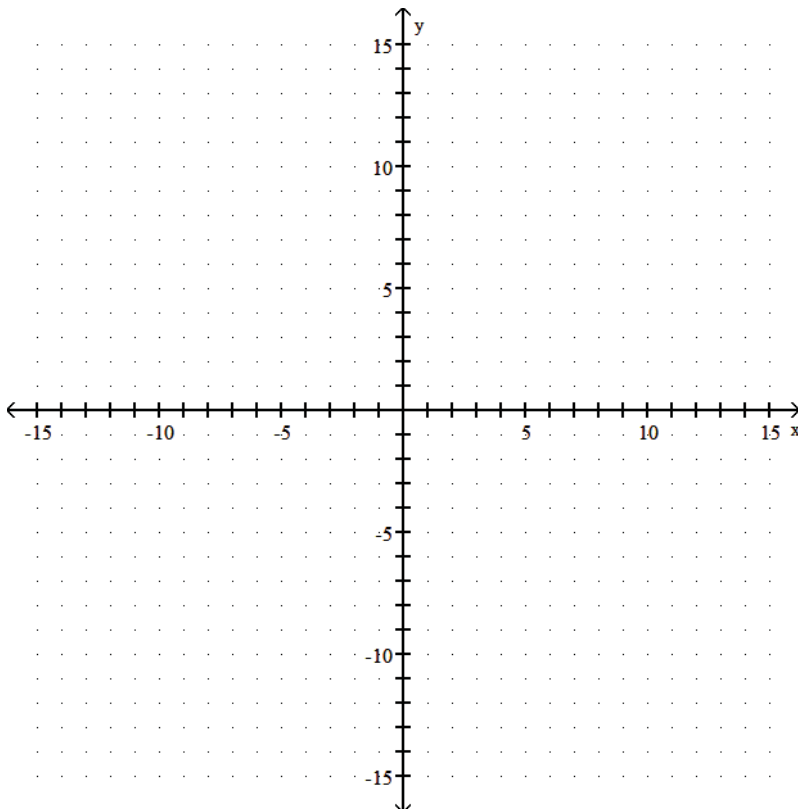**Use the graph of f to evaluate each expression.**

3)   f(0), f(2)

      f(0) = _____ f(2) = _____

For the given f(x), find the following and graph the function.

4) $f(x) = 3x^2$

   a) Identify the vertex_____

   b)   What is the axis of symmetry?_____

   c)   Does the graph open up or down?_____

   d)   Will the vertex results in a minimum or maximum value? _____

   e)   Indentify the minimum or maximum y-value._____

   f)   Evaluate f(−2) _____

   g)   Evaluate f(3) _____

   h)   Graph the function.

For the given equation, find the following then graph and solve the equation.

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

   a) Identify the vertex_____

   b) What is the axis of symmetry?_____

   c) Does the graph open up or down?_____

   f) Graph the equation.

   g) What is(are) the solution(s) to the equation?_____
       If the solution is not real, say so.
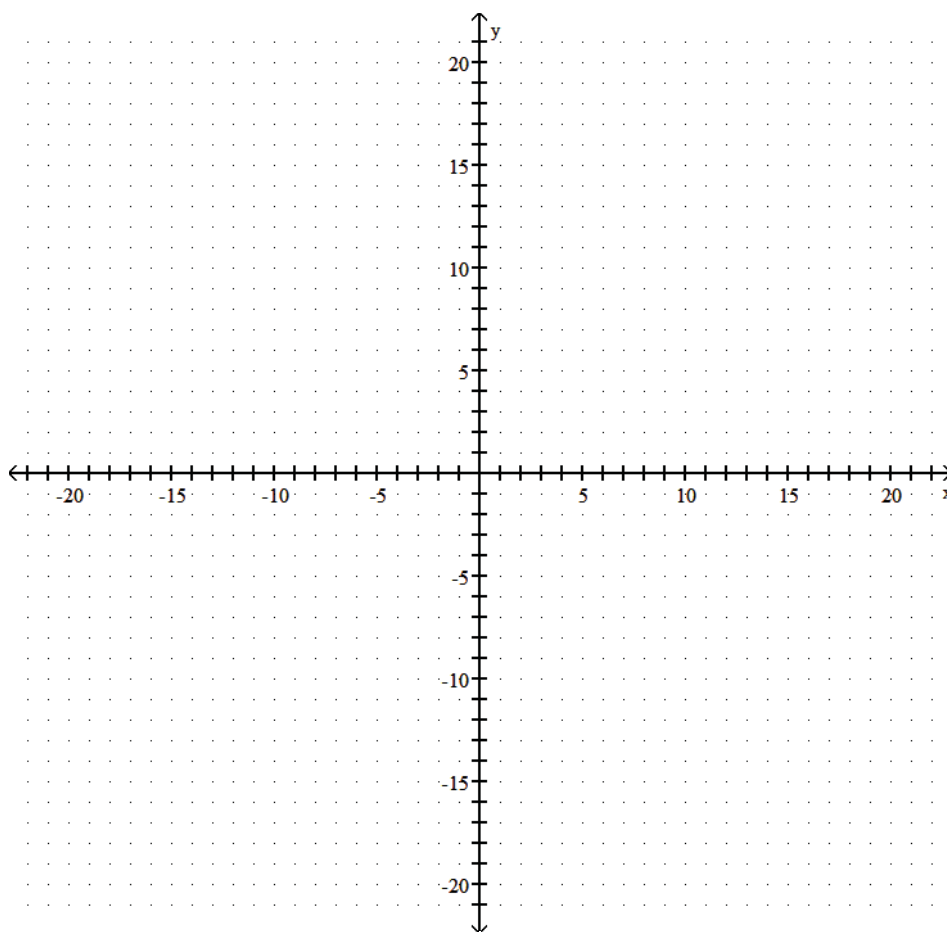
Solve quadratic equation by factoring.

6) $x^2 + 5x - 14 = 0$

Use the square root property to solve the equation.

7) $(x + 6)^2 = 13$

8) $(7x + 4)^2 = 15$

Find the term that should be added to the expression to form a perfect square trinomial. Write the resulting perfect square trinomial in factored form.

9) $x^2 + 7x$

Term to add_____

Factored Form_____

Solve the equation by completing the square.

10) $x^2 - 2x - 15 = 0$

11) $4x^2 + 6x = -1$

12) $7x^2 + 2x - 5 = 0$

13) $x^2 + x + 8 = 0$

Solve the formula for the specified variable.

14) $Ve = \dfrac{1}{2}mv^2$ for v (little v)

Use the discriminant to determine the number of real solutions.

15) $x^2 - 6x + 3 = 0$

16) $x^2 + 4x + 6 = 0$

Solve the equation using the quadratic formula. Write complex solutions in standard form.

17) $x^2 + x + 9 = 0$

18) $9x^2 + 5x + 2 = 0$

Use the given substitution to solve the equation.

19) $x^4 - 9x^2 + 8 = 0, \ u = x^2$

Solve the equation.

20) $x - 13\sqrt{x} + 42 = 0$