

### Exam #3 Version A

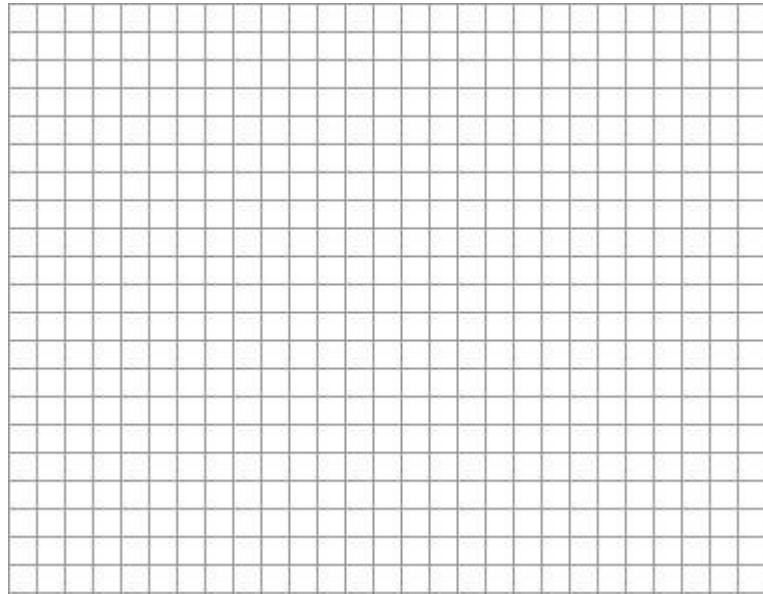
MAT 1275 Fall 2016  
Professor Bonanome

NAME:

1. The length of the top of a rectangular dining room table is 5yd more than the width. If the area is 300 square yards, find the length and the width of the table algebraically. [15 points]

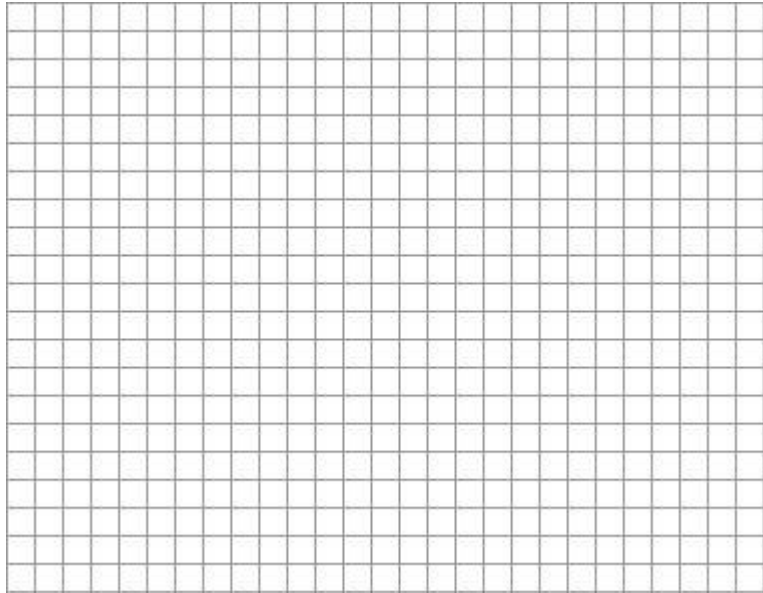
2. Graph the following quadratic function using any method. Make sure to identify the vertex, axis of symmetry, and any (x) or (y)-intercepts. [15 points]

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



3. Graph the following quadratic function using any method. Make sure to identify the vertex, axis of symmetry, and any (x) or (y)-intercepts. [15 points]

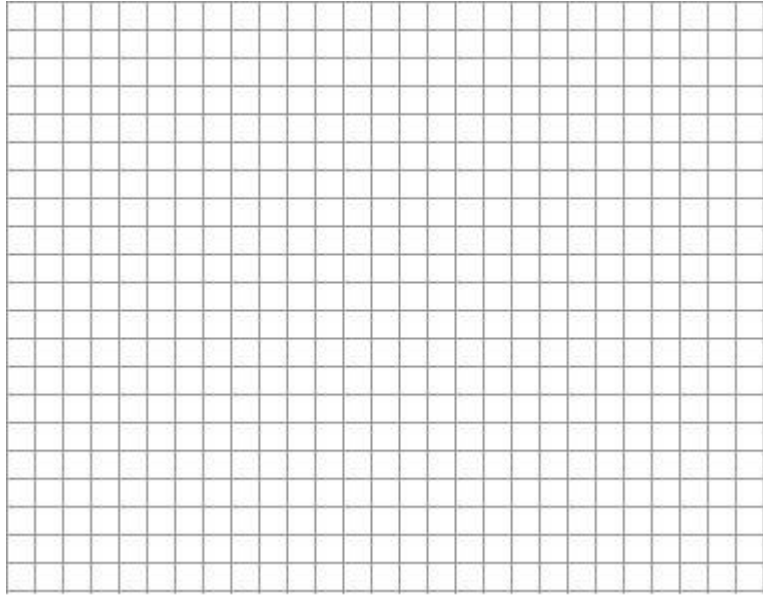
$$g(x) = \frac{1}{4}x^2 + 6$$



4. Find the radius of a circle with endpoints of a diameter  $(3, 2)$  and  $(7, 10)$ . [10 points]

5. Identify the center and radius of the circle and then graph the circle. [10 points]

$$x^2 + y^2 - 10x + 4y - 7 = 0$$



6. Solve these systems of equations. If there is not a unique solution, label the system as either dependent or inconsistent.

(a)

$$x^2 + 2y^2 = 8$$

$$2x - y = 2$$

[15 points]

(b)

$$\begin{aligned}x - 2y + z &= 3 \\-2x + 2y - 5z &= -2 \\3x + 4y + 2z &= 5\end{aligned}$$

[20 points]