

Exam #3 Version B

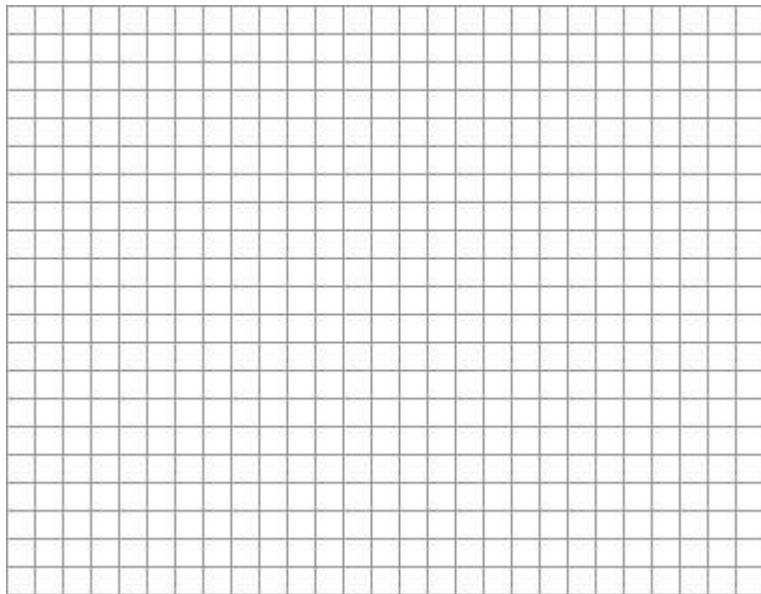
MAT 1275 Fall 2016
Professor Bonanome

NAME:

1. The height of a triangle is 6 inches more than twice the base. If the area is 18 square inches, find the base and the height of the triangle algebraically. [15 points]

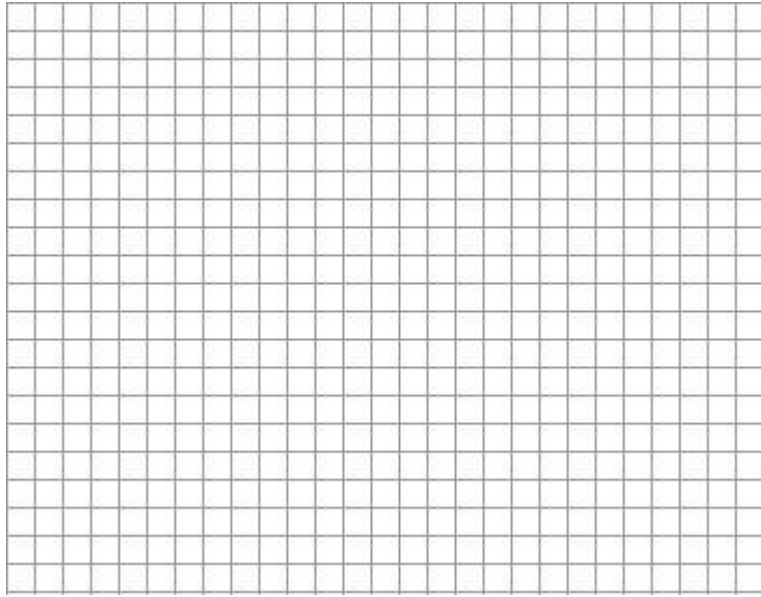
2. Graph the following quadratic function using any method. Make sure to identify the vertex, axis of symmetry, and any (x) or (y)-intercepts. [15 points]

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



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

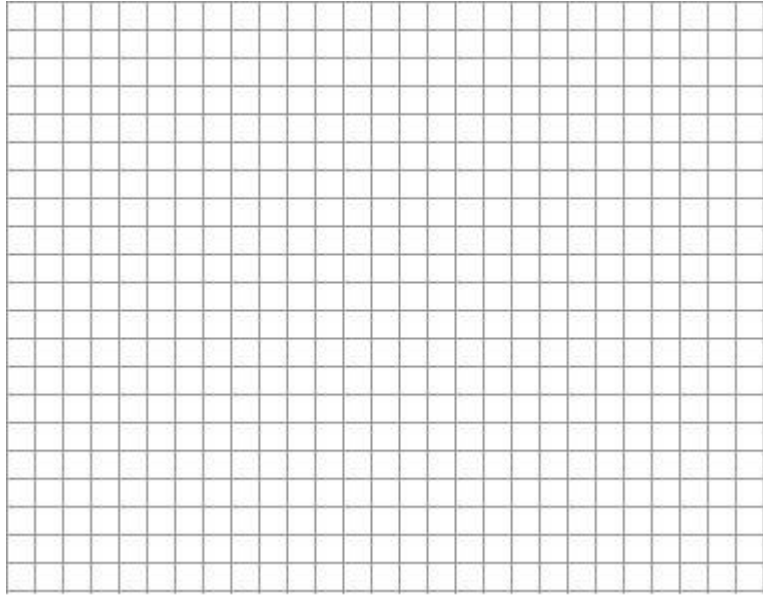
$$g(x) = -2x^2 - 12x - 19$$



4. Find the radius of a circle with endpoints of a diameter $(-3, 8)$ and $(3, -2)$. [10 points]

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

$$x^2 + y^2 - 2x - 6y - 26 = 0$$



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

(a)

$$\begin{aligned}x^2 + 4y^2 &= 16 \\x - y &= -4\end{aligned}$$

[15 points]

(b)

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

[20 points]