Name: _____ _____ / **20**

No aids (calculator, notes, text, etc.) are permitted. Show all work for full credit and box your final answer.

1. [3 points]

a. State the **distance** formula between two points (x_1, y_1) and (x_2, y_2) in the Cartesian plane.

b. State the **midpoint** formula between two points (x_1, y_1) and (x_2, y_2) in the Cartesian plane.

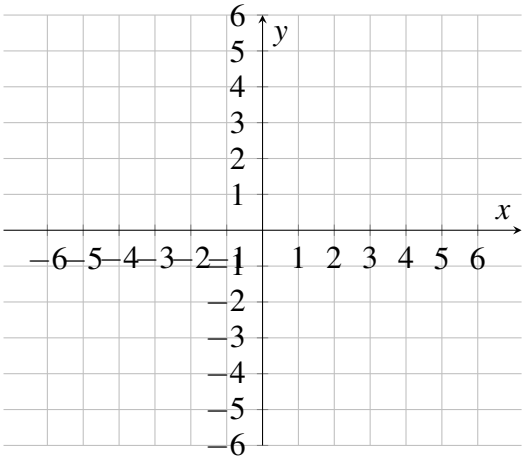
c. State the **standard form** of the equation for a circle of radius r and center (a, b).

2. [2 points]

a. Determine the distance between the following pairs of points $(8, 8)$ and $(-2, -2)$. **Fully** simplify your answer.

b. Determine the midpoint of the line segment joining the pair of points $(8, 8)$ and $(-2, -2)$.

3. [3 points] Find the **standard form** of the equation of the circle $x^2 + y^2 - 4x + 4y - 8 = 0$. Sketch a graph of the obtained equation and find the center and radius of the circle.



4. [3 points] Find the x- and y-intercepts of the given equation

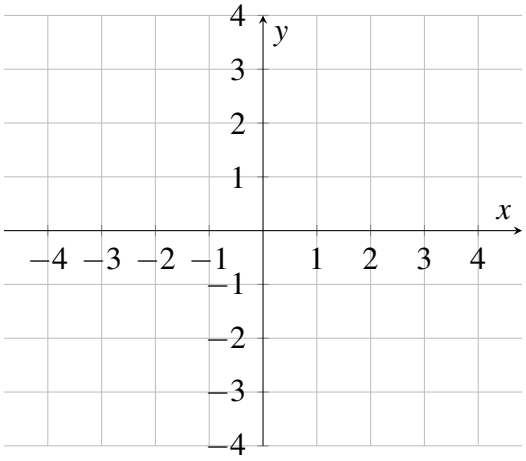
$$3y + 7x = 7(3 + x)$$

5. [2 points] Determine the slope of the line passing through the points $(-3, -5)$ and $(-2, 8)$.

6. [4 points]

a. Find the equation, **in slope-intercept form**, of the line with y-intercept $(0, -3)$ and slope of $-\frac{5}{2}$.

b. Graph the obtained straight line.



7. [3 points] Determine the slope of the line defined by the following equation:

$$3y - 2 = \frac{x}{5}$$