

In-Class Problems 5 for Monday, February 7

These problems are from [Pre-Class Problems 5](#).

1. Identify the set of values of x for which y will be a real number. Use interval notation to write your answer.

a. $y = \frac{4}{5x + 6}$

b. $y = \sqrt{25 - 49x}$

2. Find the x -intercept(s) and the y -intercept(s) of the graph of the following equations.

a. $9x^2 - y^2 = 81$

b. $y = 2|3x - 7| + 11$

3. Write the equation of the circle in standard form given the following information.

a. Center: $(-3, 7)$; Radius: 4

b. The endpoints of a diameter are $(-2, -5)$ and $(6, -11)$.

c. The center is $(9, 4)$ and the point $(1, -3)$ is a point on the circle.

d. Write an equation that represents the set of points that are 7 units from the point $(-6, 0)$.

e. The center is $(5, -8)$ and the circle is tangent to the x -axis.

4. Write the following equation of a circle in standard form. Then find the center and radius of the circle.

$$x^2 + y^2 - 6x + 14y + 30 = 0.$$

5. If $f(x) = 3x^2 - 4x - 12$, then find

a. $f(-2)$

b. $f(3)$

c. $f(x + h)$