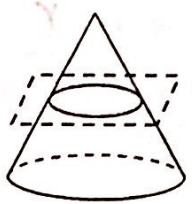
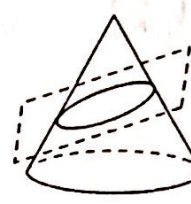
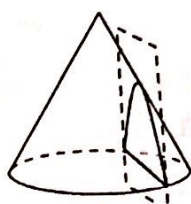
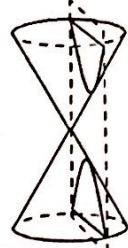
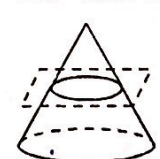
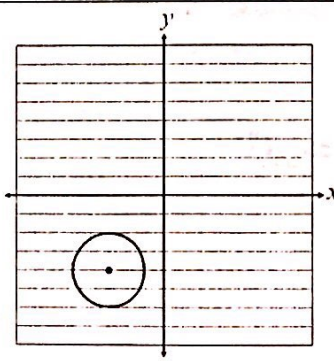
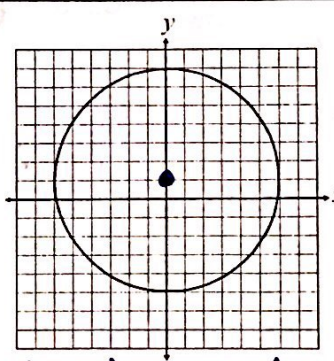


Name: _____

Date: _____

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Class: _____

Main Ideas/Questions	Notes/Examples
<p>Conic Sections</p>	<p>A conic section is formed by the intersection of a plane and a right circular cone. The angle of the plane creates the type of conic section. Label each conic section below.</p> <div style="display: flex; justify-content: space-around;">     </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> Circle Ellipse Parabola Hyperbola </div>
<p>Circles</p> 	<p>Standard Form of the Equation of a Circle:</p> $(x-h)^2 + (y-k)^2 = r^2$ <p>where (h,k) is the center and r is the radius</p>
<p>Writing Equations of Circles</p>	<p>Set 1: Given the center and radius.</p> <div style="display: flex;"> <div style="flex: 1;"> <p>1. Center: $(-4, 6)$, Radius: 4</p> $(x+4)^2 + (y-6)^2 = 4^2$ $(x+4)^2 + (y-6)^2 = 16$ </div> <div style="flex: 1;"> <p>2. Center: $(0, -2)$, Radius: 7</p> </div> </div> <div style="display: flex;"> <div style="flex: 1;"> <p>3. Center: $(1, -5)$, Radius: $\sqrt{10}$</p> $(x-1)^2 + (y+5)^2 = (\sqrt{10})^2$ $(x-1)^2 + (y+5)^2 = 10$ </div> <div style="flex: 1;"> <p>4. Center: $(9, 0)$, Radius: $5\sqrt{3}$</p> $(x-9)^2 + (y-0)^2 = (5\sqrt{3})^2$ $(x-9)^2 + y^2 = 75$ </div> </div> <p>Set 2: Given a graph.</p> <div style="display: flex;"> <div style="flex: 1;"> <p>5.</p>  </div> <div style="flex: 1;"> <p>6.</p>  <p>C: $(0, 1)$ $r = 6$</p> $(x-0)^2 + (y-1)^2 = 6^2$ $x^2 + (y-1)^2 = 36$ </div> </div>

Name:

Date:

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Class:

Main Ideas/Questions

Notes/Examples

Graphing Circles

Standard Form of the Equation of a Circle:

$$(x-h)^2 + (y-k)^2 = r^2$$

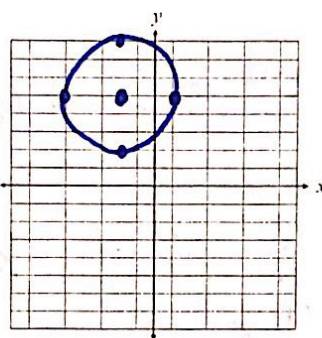
where (h,k) is the center and r is the radius

Directions: Identify the center and radius of each circle, then graph.

1. $(x+2)^2 + (y-5)^2 = 9$

Center: $(-2, 5)$

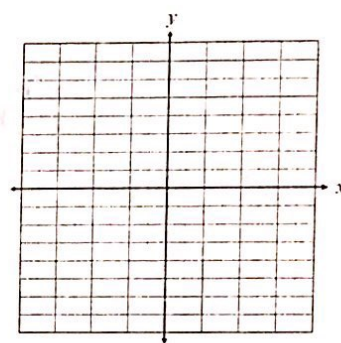
Radius: $\sqrt{9} = 3$



2. $(x-7)^2 + y^2 = 1$

Center:

Radius:



Equations NOT in Standard Form

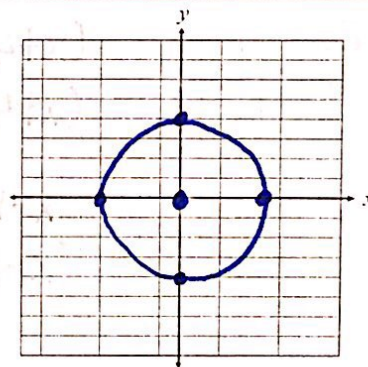
Directions: Write the equation in standard form, identify the center and radius, then graph.

3. $\frac{5x^2}{5} + \frac{5y^2}{5} = \frac{80}{5}$

$$x^2 + y^2 = 16$$

Center: $(0, 0)$

Radius: 4

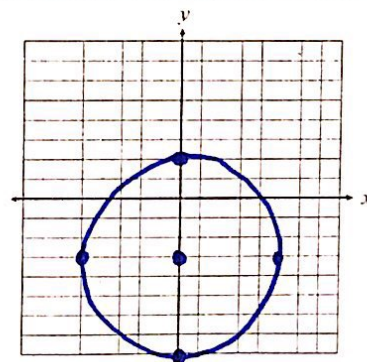


4. $(y+3)^2 = 25 - x^2$

$$x^2 + (y+3)^2 = 25$$

Center: $(0, -3)$

Radius: 5



Write the standard form of the equation of the circle that passes through the given point and whose center is the origin.

1. $\begin{matrix} x & y \\ (-2, & 6) \end{matrix}$

2. $(5, -3)$

$$x^2 + y^2 = r^2$$

$$(-2)^2 + (6)^2 = r^2$$

$$4 + 36 = r^2$$

$$40 = r^2$$

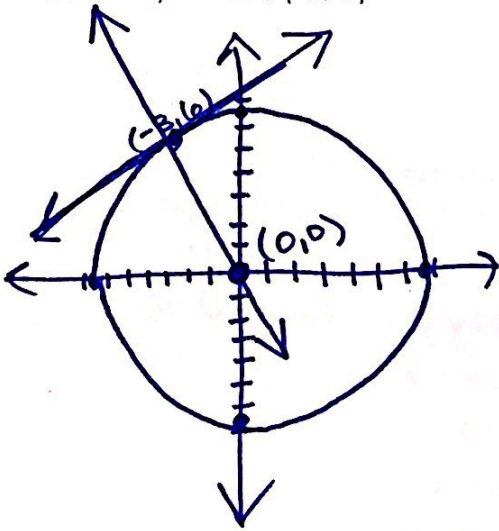
$$x^2 + y^2 = 40$$

$$x^2 + y^2 = 34$$

Write an equation of the line tangent to the given circle at the given point.

3. $x^2 + y^2 = 45$; $(-3, 6)$

4. $x^2 + y^2 = 34$; $(-5, 3)$ $(0, 0)$



$$m = \frac{0 - 3}{0 - -5} = \frac{-3}{5}$$

$$\perp m = \frac{5}{3}; (-5, 3)$$

$$y - y_1 = m(x - x_1)$$

$$y - 3 = \frac{5}{3}(x + 5)$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{0 - 6}{0 - -3} = \frac{-6}{3} = -2$$

$$y - 3 = \frac{5}{3}x + \frac{25}{3}$$

$$\perp m = \frac{1}{2}; (-3, 6)$$

$$y = \frac{5}{3}x + \frac{34}{3}$$

$$y - y_1 = m(x - x_1)$$

$$y - 6 = \frac{1}{2}(x + 3)$$

$$y - 6 = \frac{1}{2}x + \frac{3}{2}$$

$$y = \frac{1}{2}x + \frac{15}{2}$$