Kuta Software - Infinite Precalculus

Name Key

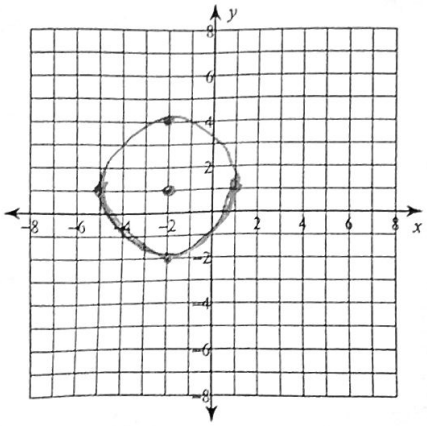
Circles

Date _____ Period ____

Identify the center and radius of each. Then sketch the graph.

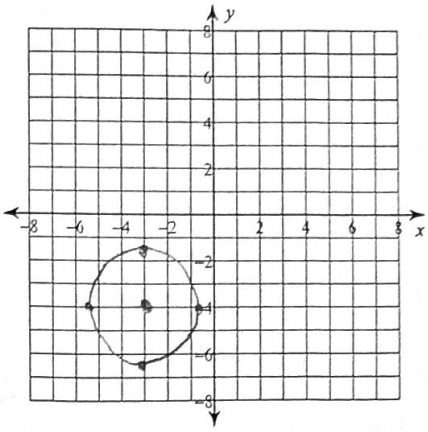
1) $(x+2)^2+(y-1)^2=9$

center $(-2,1)$
$r=3$



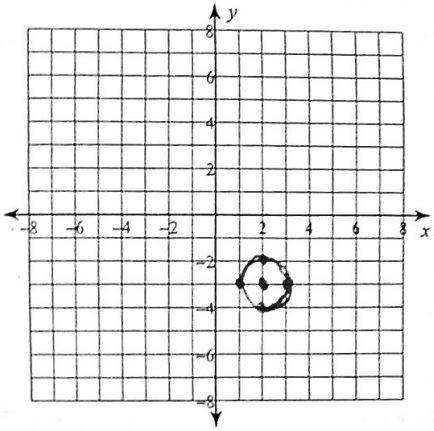
2) $(x+3)^2+(y+4)^2=5$

center $(-3,-4)$
$r=\sqrt{5}$



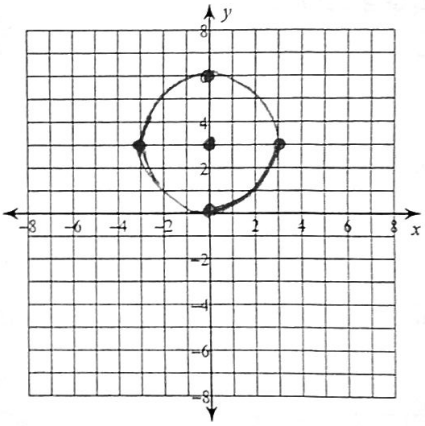
3) $(x-2)^2+(y+3)^2=1$

center $(2,-3)$
$r=1$

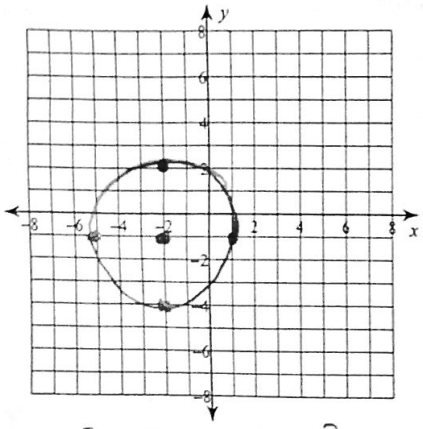


4) $x^2+y^2-6y=0$

$x^2+y^2-6y+9=+9$
$x^2+(y-3)^2=9$
center $(0,3)$
$r=3$



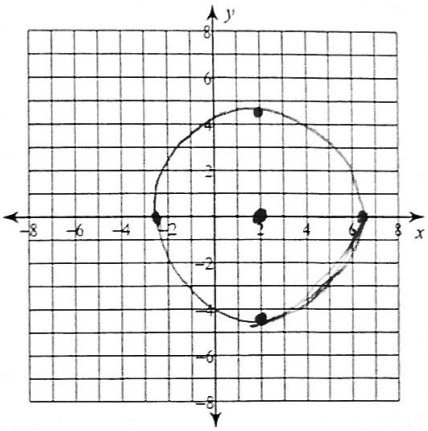
5) $x^2+y^2+4x+2y-4=0$



$x^2+4x+4+y^2+2y+1=4+4+1$
$(x+2)^2+(y+1)^2=9$
center $(-2,-1)$
$r=3$

6) $x^2+y^2-4x-14=0$

$x^2-4x+4+y^2=14+4$
$(x-2)^2+y^2=18$
center $(2,0)$
$r=3\sqrt{2}$



Use the information provided to write the standard form equation of each circle.

$A = \pi r^2$
$\pi r^2 = 16\pi$
$r = 4$

7) Center: $(-13, -14)$
Radius: 1

$(x+13)^2 + (y+14)^2 = 1$

8) Center: $(15, -8)$
Area: 16π

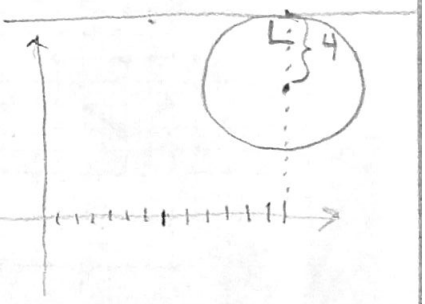
$(x-15)^2 + (y+8)^2 = 16$

9) Center: $(-2, 9)$
Point on Circle: $(-5, 18)$

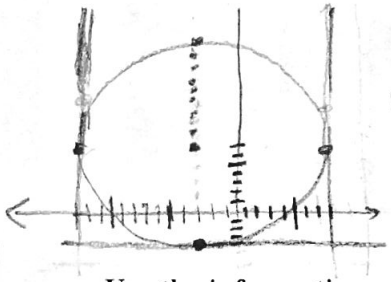
$(x+2)^2 + (y-9)^2 = r^2$
$(-5+2)^2 + (18-9)^2 = r^2$
$(-3)^2 + 9^2 = r^2$
$9 + 81 = r^2$
$90 = r^2$
$\boxed{(x+2)^2 + (y-9)^2 = 90}$

10) Center: $(13, 7)$
Tangent to $y = 11$

$(x-13)^2 + (y-7)^2 = 4^2$
$\boxed{(x-13)^2 + (y-7)^2 = 16}$



11) Center lies in the second quadrant
Tangent to $x = -14$, $y = -4$, and $x = 8$



center $(-3, -4)$
$r = 11$
$\boxed{(x+3)^2 + (y+4)^2 = 121}$

12) Ends of a diameter: $(11, -6)$ and $(1, 14)$

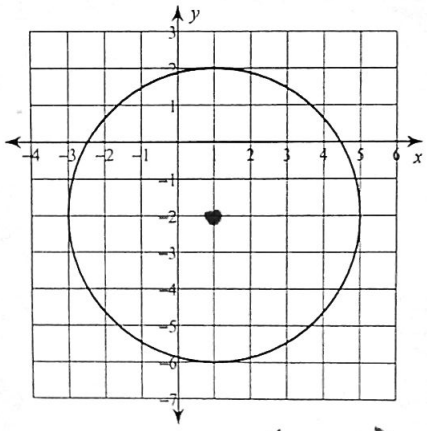
$d = \sqrt{(11-1)^2 + (-6-14)^2}$
$d = \sqrt{100 + 400} = \sqrt{500} = 10\sqrt{5}$
$\boxed{r = 5\sqrt{5}}$

center $\left(\frac{11+1}{2}, \frac{-6+14}{2}\right)$
$\boxed{(6, 4)}$

$(x-6)^2 + (y-4)^2 = (5\sqrt{5})^2$
$\boxed{(x-6)^2 + (y-4)^2 = 125}$

Use the information provided to write the general conic form equation of each circle.

13)



center $(1, -2)$

standard form $\boxed{(x-1)^2 + (y+2)^2 = 16}$

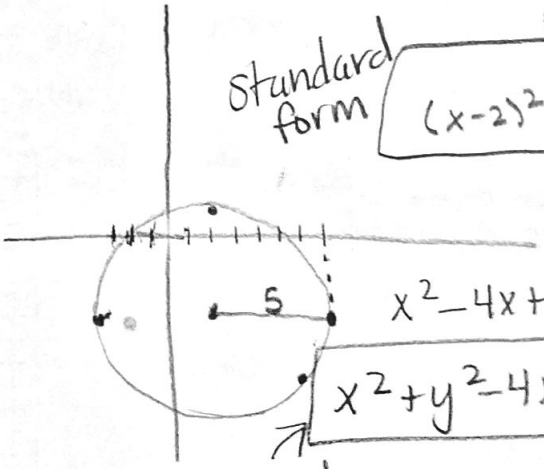
$x^2 - 2x + 1 + y^2 + 4y + 4 = 16$

general conic form $\boxed{x^2 + y^2 - 2x + 4y - 11 = 0}$

14) Three points on the circle:
$(7, -4)$, $(-3, -4)$, and $(6, -7)$

center $(2, -4)$
$r = 5$

standard form $\boxed{(x-2)^2 + (y+4)^2 = 25}$



$x^2 - 4x + 4 + y^2 + 8y + 16 = 25$

$\boxed{x^2 + y^2 - 4x + 8y - 5 = 0}$

general conic form