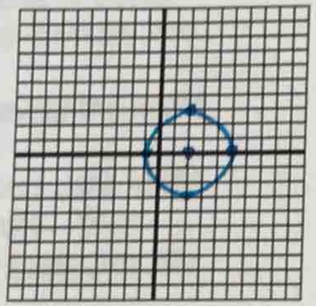
10.1 Practice – Circles

Name _____ Date _____ Period _____

Graph the following equations and state the domain and range:

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



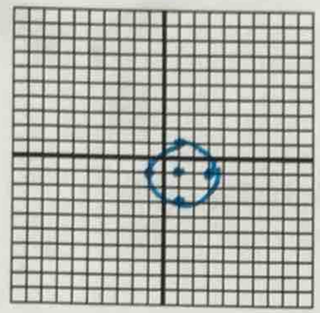
Center: (0, 2)

Radius: 3

Domain: [-1, 5]

Range: [-3, 3]

2. $(x-1)^2+(y+1)^2=4$



Center: (1, -1)

Radius: 2

Domain: [-1, 3]

Range: [-3, 1]

Write the equation of the circles then state their domain and range:

3. Center (-4, -5), Radius = $\sqrt{13}$

$(x+4)^2+(y+5)^2=13$

D: $[-4-\sqrt{13}, -4+\sqrt{13}]$

R: $[-5-\sqrt{13}, -5+\sqrt{13}]$

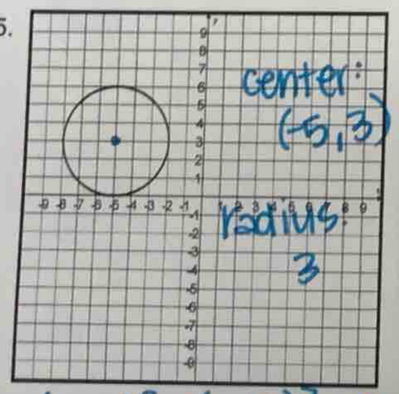
4. Center $\left(\frac{2}{3}, \frac{5}{8}\right)$ and an area of 49π.

$A=\pi r^2$

$r=7$

$(x-\frac{2}{3})^2+(y-\frac{5}{8})^2=49$

5.



center: (-5, 3)

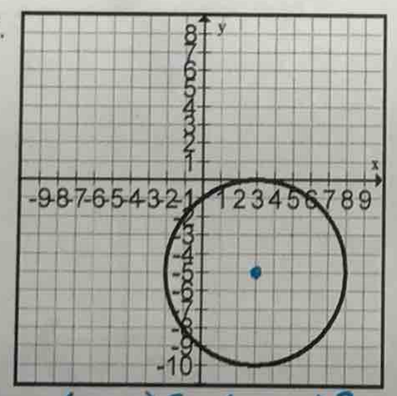
radius: 3

$(x+5)^2+(y-3)^2=9$

D: [-8, -2]

R: [0, 6]

6.



$(x-3)^2+(y+5)^2=25$

D: [-2, 8]

R: [-10, 0]

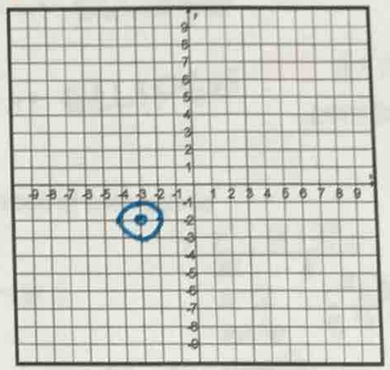
7. Both of the equations below represent a circle, in general form. Complete the squares to find the standard form equation and graph each circle.

A. $x^2+y^2+6x+4y+12=0$

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

center: (-3, -2)

radius: 1



B. $4x^2+4y^2-24x+32y+72=0$

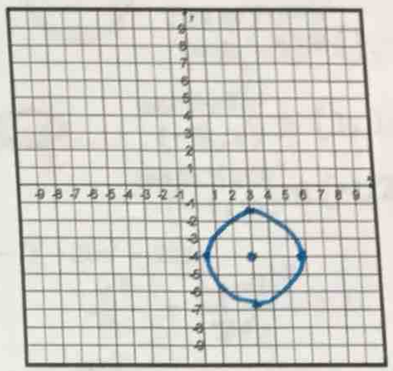
$4(x^2-6x+9)+4(y^2+8y+16)=-72+36+64$

$\frac{4(x-3)^2}{4}+\frac{4(y+4)^2}{4}=\frac{28}{4}$

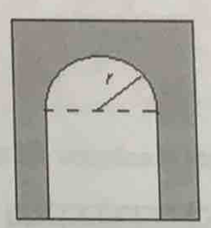
$(x-3)^2+(y+4)^2=7$

center: (3, -4)

Radius: $\sqrt{7}$ (about 2.6...)



8. The face of a one lane tunnel in the figure is a square with a semi-circle above it. The semi-circle can be described by the equation $x^2+y^2=81$. A truck 15 feet wide and 22 feet tall tries to drive through the tunnel. Will it make it? Justify your answer!



Yes

9. The intersection of a right circular cone and a plane neither perpendicular nor parallel to its axis, nor though the base is a(n) ellipse.

10. Slicing a cone _____ gives a cross section of an ellipse.

A. Parallel to its base circle

B. Parallel to its side N/A

C. Perpendicular to its base hyperbola

D. None of the above

see #9