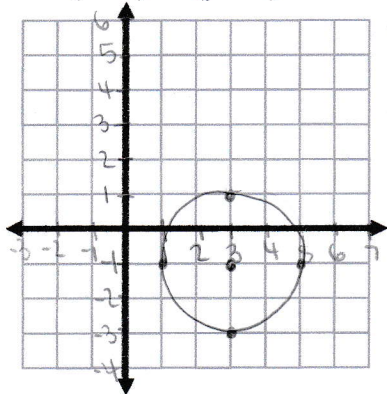


Note: If r^2 is not a perfect square then leave r in simplified radical form but use the decimal equivalent for graphing. Example: $\sqrt{12} = 2\sqrt{3} = 3.46$

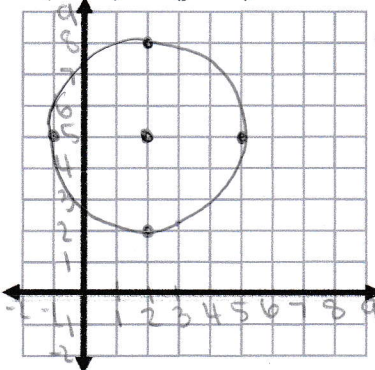
1) Graph the following circle:

a. $(x - 3)^2 + (y + 1)^2 = 4$



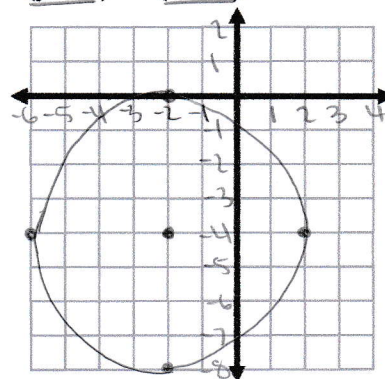
center: $(3, -1)$
radius: $\sqrt{4} = 2$

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



center: $(2, 5)$
radius: $\sqrt{9} = 3$

c. $(y + 4)^2 + (x + 2)^2 = 16$



switched!
center: $(-2, -4)$
radius: $\sqrt{16} = 4$

2) For each circle: Identify its center and radius.

a. $(x + 3)^2 + (y - 1)^2 = 4$

Center: $(-3, 1)$

Radius: 2

b. $x^2 + (y - 3)^2 = 18$

Center: $(0, 3)$

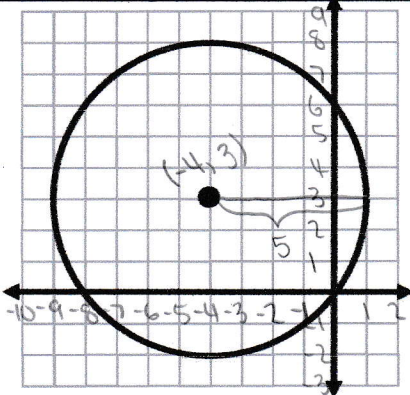
Radius: $\sqrt{18} = 3\sqrt{2}$

c. $(y + 8)^2 + (x + 2)^2 = 72$

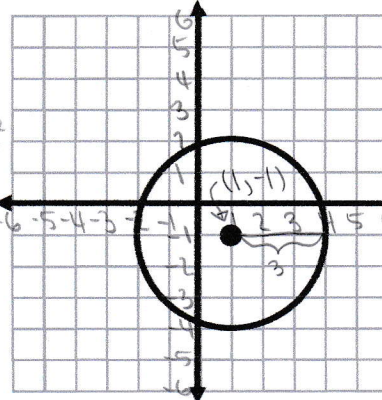
Center: $(-2, -8)$

Radius: $\sqrt{72} = 6\sqrt{2}$

3) Write the equation of the following circles:

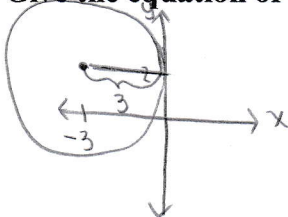


$(x - (-4))^2 + (y - 3)^2 = 5^2$
 $(x + 4)^2 + (y - 3)^2 = 25$



$(x - 1)^2 + (y - (-1))^2 = (3)^2$
 $(x - 1)^2 + (y + 1)^2 = 9$

4) Give the equation of the circle that is tangent to the y-axis and center is $(-3, 2)$.



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

5) Compare and contrast the following pairs of circles

a. Circle #1: $(x - 3)^2 + (y + 1)^2 = 25$

Circle #2: $(x + 1)^2 + (y - 2)^2 = 25$

They both have a radius of 5, however circle #1 is centered at $(3, -1)$ & circle #2 is centered at $(-1, 2)$.

b. Circle #1: $(y + 4)^2 + (x + 7)^2 = 6$

Circle #2: $(x + 7)^2 + (y + 4)^2 = 36$

They are both centered at $(-7, -4)$; however circle #1 has a radius of $\sqrt{6}$ and circle #2 has a radius of 6.