

NAME: _____ Score _____/10

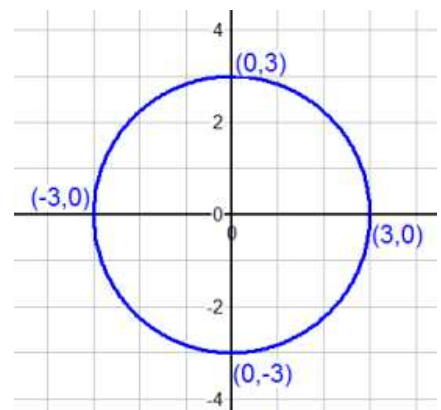
Please **print** your name **USE FUNCTION NOTATION when appropriate!****SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION****No Decimals, mixed numbers, complex fractions, and no boxed or circled answers. Show work.**

- The equation of the circle with center at the origin and radius r is $x^2 + y^2 = r^2$
- The equation of the circle with center $(-3, 4)$ and radius 5 is $(x + 3)^2 + (y - 4)^2 = 5^2$
- What must be added to $x^2 + 7x$ to create a perfect square? $\left(\frac{7}{2}\right)^2$

Note: $\frac{7^2}{2} = \frac{49}{2}$ and $\left(\frac{7}{2}\right)^2 = \frac{49}{4}$

- A **term** is a **letter**, a **number**, or a product of **letters** and **numbers**.
- The product of $5x^2$ and $2x^3$ is $10x^5$
- The sum of $5x^4$ and $-2x^4$ is $3x^4$
- The sum of $3x^2$ and $7x^5$ is $3x^2 + 7x^5$
- Sketch the graph of the equation $x^2 + y^2 = 9$.
Label the **x** and **y**-intercepts.

Note: The only equations which produce lines as graphs are linear equations.



- (2 pts.) Find the center and radius of the circle whose equation is $x^2 + y^2 - 6x + 4y + 9 = 0$.

$$(x^2 - 6x) + (y^2 + 4y) = -9$$

$$(x^2 - 6x + 9) + (y^2 + 4y + 4) = -9 + 9 + 4 = 4$$

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

The center of the circle is $(3, -2)$.

The radius is 2.