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**Nombre del trabajo: ecuación de la  
circunferencia**

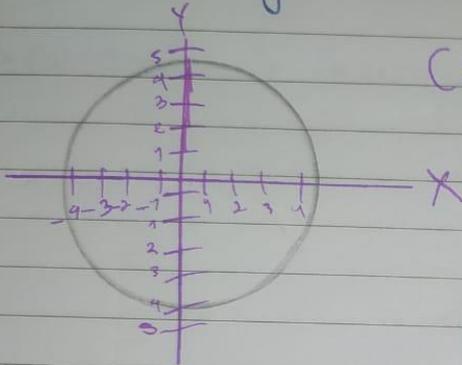
**Materia: geometría analítica**

**Grado:3 semestre**

**Grupo: “U”**

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# Solución ejercicio 1

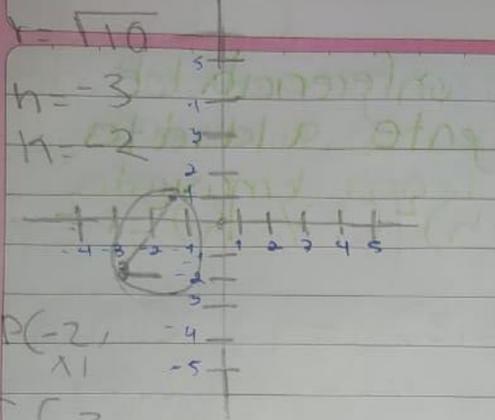


$$(s)^2 = (s)(s) = 26 \quad (h, k)$$
$$r = ?$$
$$(0, 0)$$

$$(x-h)^2 + (y-k)^2 = r^2$$
$$(x-0)^2 + (y-0)^2 = 5^2$$
$$x^2 + y^2 = 25$$

h k  
C(-3, -2)

Ejercicio



$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$r = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$r = \sqrt{(-3 - (-2))^2 + (-2 - (-4))^2}$$

$$r = \sqrt{(-3 + 2)^2 + (-2 + 4)^2}$$

$$r = \sqrt{(-1)^2 + (2)^2}$$

$$(x - h)^2 + (y - k)^2 = r^2 \quad r = \sqrt{1 + 9} = \sqrt{10}$$

$$(x - (-3))^2 + (y - (-2))^2 = (\sqrt{10})^2$$

$$(x + 3)^2 + (y + 2)^2 = 10$$

$$x^2 + 6x + 9 + y^2 + 4y + 4 = 10$$

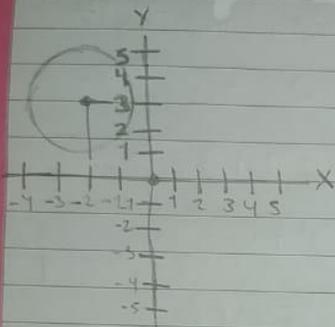
$$x^2 + y^2 + 6x + 4y + 13 = 10$$

$$x^2 + y^2 + 6x + 4y + 13 = 10 =$$

$$x^2 + y^2 + 6x + 4y + 3 = 0$$

Ejercicio 4

Hallar la ecuación de la circunferencia de centro  $(-2, 3)$  y radio 4



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

$$C(-2, 3) \quad r=4 \quad C(h, k)$$

$$C(-2, 3)$$

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

$$(x+2)^2 + (y-3)^2 = 16$$

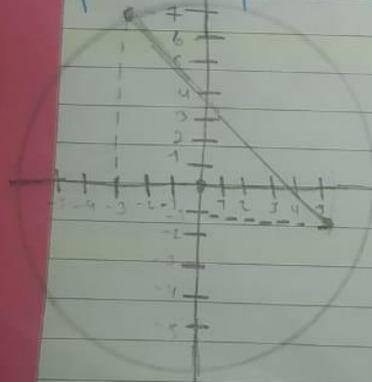
$$x^2 + 2x + 4 + y^2 - 6y + 9 = 16$$

$$x^2 + y^2 + 2x - 6y + 13 = 16$$

$$x^2 + y^2 + 2x - 6y + 13 - 16 = 0$$

$$\underline{x^2 + y^2 + 2x - 6y - 3 = 0}$$

Hallar la ecuación de la circunferencia de manera que uno de sus diámetros sea el segmento que une los puntos  $(5, -1)$  y  $(-3, 7)$ .



$(1, 3)$	$x_2$	$y_2$
$(5, -1)$	$x_1$	$y_1$

$$h = \frac{x_1 + x_2}{2} \quad k = \frac{y_1 + y_2}{2}$$

$$C(1, 3)$$

$$r = \sqrt{32}$$

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

$$(x-1)^2 + (y-3)^2 = (\sqrt{32})^2$$

$$x^2 - 2x + 1 + y^2 - 6y + 9 = 32$$

$$x^2 + y^2 - 2x - 6y + 10 = 32$$

$$x^2 + y^2 - 2x - 6y + 10 - 32 = 0$$

$$\underline{x^2 + y^2 - 2x - 6y - 22 = 0}$$

$$r = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$r = \sqrt{(1 - 5)^2 + (3 - (-1))^2}$$

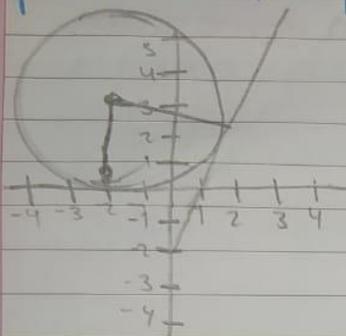
$$r = \sqrt{(-4)^2 + (4)^2}$$

$$r = \sqrt{16 + 16}$$

$$r = \sqrt{32}$$

### Ejercicio 3

Encuentra la ecuación de la circunferencia cuyo centro es el punto  $C(-2, 3)$  y es tangente a la recta  $20x - 21y - 42 = 0$



$$20x - 21y - 42 = 0 \quad C(-2, 3)$$

$$20x - 42 = 21y$$

$$y = \frac{20x - 42}{21}$$

$$y = \frac{20x - 42}{21}$$

$$d = \frac{Ax + By + C}{\pm \sqrt{A^2 + B^2}}$$

$$y = \frac{20}{21}x - 2$$

$$A = 20$$

$$B = 21$$

$$x = -2$$

$$y = 3$$

$$| -5 | = 5$$

$$Ax + By + C = 0$$

$$m = \frac{20}{21}$$

$$(0, 2)$$

ordena el origen

$$d = \frac{|20(-2) + 21(3) - 42|}{\sqrt{(21)^2 + (20)^2}}$$