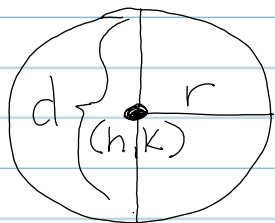


CIRCLES 2.4



$r = \text{radius}$
circumference = $2\pi r$
area = πr^2

standard:

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

center = (h, k)
 r

general form

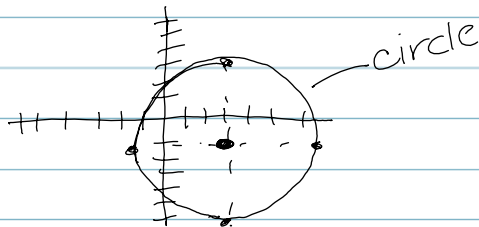
$$ax^2 + by^2 + cx + dy + e = 0$$

$a = b$

EX: $(x-3)^2 + (y+1)^2 = 16$

$x-3=0$
 $x=3$

$(h, k) = (3, -1)$
 $r = \sqrt{16} = 4$



EX: #31

$$2x^2 + 2y^2 + 12x + 8y - 24 = 0$$

$$x^2 + y^2 - 6x + 4y - 12 = 0$$

$$x^2 - 6x + \underline{9} + y^2 + 4y + \underline{4} = 12 + \underline{9} + \underline{4}$$

$$\left(\frac{-6}{2}\right)^2 = \underline{(-3)^2} = 9 \quad \left(\frac{4}{2}\right)^2 = \underline{(2)^2} = 4$$

$$(x-3)^2 + (y+2)^2 = \underline{25}$$

$C = (3, -2)$

$r = 5$ (then graph)