Exercices
équation générale

1. $x^2 - 2x + y^2 - 2y - 2 = 0$

$(x^2 - 2x + 1) - 1 + (y^2 - 2y + 1) - 1 - 2 = 0$

$(x-1)^2 + (y-1)^2 - 4 = 0$

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

centre : $(1, 1)$ rayon : 2

2. $x^2 + y^2 - 6y + 2x + 3 = 0$

$(x^2 + 2x + 1) - 1 + (y^2 - 6y + 9) - 9 + 3 = 0$

$(x+1)^2 + (y-3)^2 - 7 = 0$

$(x-1)^2 + (y-3)^2 = 7$

centre : $(1, 3)$

rayon : $\sqrt{7}$

3. $x^2 - 12x + 10y + y^2 + 47 = 0$

$(x^2 - 12x + 36) - 36 + (y^2 + 10y + 25) - 25 + 47 = 0$

$(x-6)^2 + (y+5)^2 - 14 = 0$

$(x-6)^2 + (y+5)^2 = 14$

4. $\frac{4x^2}{4} - \frac{4x}{4} + \frac{4y^2}{4} + \frac{12y}{4} - \frac{2}{4} = \frac{0}{4}$

$x^2 - x + y^2 + 3y - \frac{1}{2} = 0$

$\left(x^2 - x + \frac{1}{4}\right) - \frac{1}{4} + \left(y^2 + 3y + \frac{9}{4}\right) - \frac{9}{4} - \frac{1}{2} = 0$

$\left(x - \frac{1}{2}\right)^2 + \left(y + \frac{3}{2}\right)^2 - 3 = 0$

$\left(x - \frac{1}{2}\right)^2 + \left(y + \frac{3}{2}\right)^2 = 3$

centre: $\left(\frac{1}{2}, -\frac{3}{2}\right)$

rayon: $\sqrt{3}$