

LIP : TE 2 GEOMETRIE PLANE

EXERCICE 1 A(2; y) d: -3x+4y-18=0

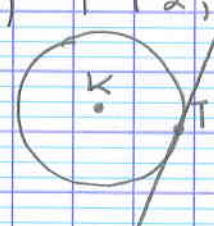
$$\text{dist}(d, A) = 7 \Rightarrow \frac{|-6+4y-18|}{\sqrt{9+16}} = 7 \Rightarrow$$

$$|4y-24| = 35 \Rightarrow \begin{cases} 4y-24 = 35 \Rightarrow y_1 = \frac{59}{4} \\ 4y-24 = -35 \Rightarrow y_2 = -\frac{11}{4} \end{cases}$$

EXERCICE 2 C: $x^2+y^2+8x-10y-59=0$

a) $(x+4)^2-16+(y-5)^2-25-59=0$
 $(x+4)^2+(y-5)^2=100$ K(-4;5) r=10

b) T(2;13)



$$\vec{n}_t = \vec{KT} = \begin{pmatrix} 6 \\ 8 \end{pmatrix} \parallel \begin{pmatrix} 3 \\ 4 \end{pmatrix}$$

$$3x+4y+c=0$$

$$T: 6+52+c=0 \Rightarrow c=-58$$

$$t: 3x+4y-58=0$$

EXERCICE 3 K ∈ Ox ⇒ K(x₀, 0) $(x-x_0)^2+y^2=r^2$

$$R: (2-x_0)^2+9=r^2 \quad \} \quad (2-x_0)^2+9=(5+x_0)^2+16 \Rightarrow$$

$$S: (-5-x_0)^2+16=r^2 \quad \} \quad 4-4x_0+\cancel{x_0^2}+9=25+10x_0+\cancel{x_0^2}+16$$

$$\Rightarrow 14x_0 = -28 \Rightarrow x_0 = -2$$

$$x_0 = -2 \quad (2+2)^2+9=r^2 \Rightarrow r^2=25 \Rightarrow r=5$$

$$(x+2)^2+y^2=25$$

Exercice 4

$$C: (x-2)^2 + (y+3)^2 = 25 \quad d: 5x - 3y - 15 = 0$$
$$\Rightarrow 5x - 15 = 3y \Rightarrow$$
$$y = \frac{5}{3}x - 5$$

$$(x-2)^2 + \left(\frac{5}{3}x - 5\right)^2 = 25$$
$$\Rightarrow x^2 - 4x + 4 + \frac{25}{9}x^2 - \frac{20}{3}x + 4 - 25 = 0 \Rightarrow$$
$$\Rightarrow \frac{34x^2}{9} - \frac{32}{3}x - 17 = 0 \Rightarrow$$

$$\Rightarrow 34x^2 - 96x - 153 = 0$$

$$\Delta = 30024 \quad x_{1,2} = \frac{96 \pm \sqrt{30024}}{68}$$

$$x_1 = 3.96 \quad y_1 = 1.6$$

$$x_2 = -1.14 \quad y_2 = -6.9$$