

$$4) x^2 - 16x + y^2 - 6y + 57 = 0$$

$$(x^2 - 16x + 64) - 64 + (y^2 - 6y + 9) - 9 = -57$$

$$(x-8)^2 + (y-3)^2 = 16$$

$$S(8; 3)$$

$$r=4$$

Ex 3)  $x^2 + 4x + y^2 - 6y + 14 = 0$

$$(x^2 + 4x + 4) - 4 + (y^2 - 6y + 9) - 9 = -14$$

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

$\rightarrow r^2 = -1$  ce n'est pas possible  
 $R(F)$  où  $f(x) = \sqrt{x}$  est égal à l'intervalle  $]0; \infty[$

Devoir 8:

Ex 1) a)  $S = I_{AB}$   $r = \frac{\|AB\|}{2}$   $\vec{AB} = -3; -3$

$$S = \frac{1}{2} \vec{AB}$$

$$r = \frac{3\sqrt{2}}{2}$$

$$\|AB\| = \sqrt{9+9} = \sqrt{18} = 3\sqrt{2}$$

$$S(\frac{1}{2}; \frac{3}{2})$$

$$(x-x_0)^2 + (y-y_0)^2 = r^2$$

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

b)  $S = I_{AB}$   $r = \frac{\|AB\|}{2}$   $\vec{AB} = 4; -9$

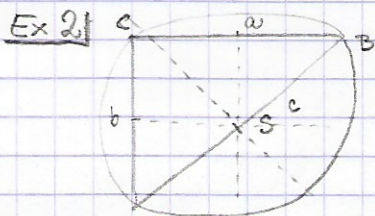
$$S = \frac{-6i-1}{2}$$

$$r = \frac{\sqrt{97}}{2}$$

$$\|AB\| = \sqrt{16+81} = \sqrt{97}$$

$$S(-3; -\frac{1}{2})$$

$$(x+3)^2 + (y+\frac{1}{2})^2 = \frac{97}{4}$$



$m_{BC}: \vec{n} = \vec{CB} \quad \vec{CB}(1;1)$

$$m_{BC}: x+y+c=0 \quad I_{CB} = \frac{-1 \cdot 1}{2} = (-\frac{1}{2}; \frac{3}{2})$$

$$I_S \Rightarrow -\frac{1}{2} + \frac{3}{2} = -c$$

$$c=1$$

$$x+y-1=0$$

$m_b: \vec{n} = \vec{AC} \quad \vec{AC}(0; -2)$

$$m_b: -2y+c=0 \quad I_{AC} = \frac{-2 \cdot 4}{2} = (-1; 2)$$

$$I_{AC} \Rightarrow -4+c=0$$

$$c=4$$

$$-2y+4=0$$

$m_c: \vec{n} = \vec{AB} \quad \vec{AB}(1; -1)$

$$m_c: x-y+c=0 \quad I_{AB} = \frac{-1 \cdot 5}{2} = (-\frac{1}{2}; \frac{5}{2})$$

$$I_{AC} \Rightarrow -\frac{1}{2} - \frac{5}{2} + c = 0$$

$$c=3$$

$$x-y+3=0$$

S:  $x+y-1=0$   $y=1+1=2$

$$x-2+3=0$$

$$2x+2=0$$

$$x=-1$$

$$S(-1; 2)$$

r:  $\|SA\| \quad \vec{SA}(0; 1)$

$$\|SA\| = \sqrt{0+1} = \sqrt{1} = 1$$

$$(x-x_0)^2 + (y-y_0)^2 = r^2$$

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

Ex 3) (c):  $x^2 - 14x + y^2 - 4y + 49 = 0$   $T(7; 4)$

$$(x-7)^2 - 49 + (y-2)^2 - 4 = -49$$

$$(x-7)^2 + (y-2)^2 = 4$$

$$S(7; 2) \quad \vec{ST}(0; 2)$$

$$\vec{TH}(x-7; y-4)$$

$$0 \cdot (x-7) + 2 \cdot (y-4) = 0$$

$$(+) : y=4$$

Ex 4) (c):  $x^2 - x + y^2 - 3y - 2 = 0$   $T(2; 3)$

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

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

$$S(\frac{1}{2}; \frac{3}{2}) \quad \vec{ST}(\frac{3}{2}; \frac{3}{2})$$

$$\vec{TH}(x-2; y-3)$$

$$\frac{3}{2}(x-2) + \frac{3}{2}(y-3) = 0$$

$$\frac{3}{2}x - 3 + \frac{3}{2}y - \frac{9}{2} = 0$$

$$\frac{3}{2}x + \frac{3}{2}y = +\frac{15}{2} \quad /: \frac{3}{2}$$

$$x+y=5$$

$$y = -x+5$$

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

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

$$S(-1; 2)$$

$$\vec{ST} (1; 0)$$

$$\vec{TH} (x; y-2)$$

$$\vec{ST} \cdot \vec{TH} = 0$$

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

$$\underline{\underline{(+): x=0}}$$