Correction

$$\begin{cases} 2x - 2y = 3 \\ 2x + 2y = 10 \end{cases}$$

$$\begin{cases} 2x - 2y = 3 \\ 4y = 7 \end{cases} \qquad L_2 \to L_2 - L_1$$

$$\begin{cases} 2x - 2\times\frac{7}{4} = 3 \Rightarrow x = \frac{\left(3+2\times\frac{7}{4}\right)}{2} \\ y = \frac{7}{4} \end{cases}$$

$$= \frac{13}{4}.$$

- savoir déterminer les coordonnées de l'intersection d'une droite et d'un cercle.

$\mathscr{C} : (x-4)^2 + (y-3)^2 = 8$

$(d) : x + y - 7 = 0$

- $M(x;y) \in (d) \cap \mathscr{C}$

ssi $\begin{cases} (x-4)^2 + (y-3)^2 = 8 \\ x + y - 7 = 0 \end{cases}$

ssi $\begin{cases} (x-4)^2 + (y-3)^2 = 8 \\ y = -x + 7 \end{cases}$

ssi $\begin{cases} (x-4)^2 + (\underbrace{-x+7-3}_{4-x})^2 = 8 \\ y = -x+7 \end{cases}$

ssi $\begin{cases} x^2 - 8x + 16 + 16 - 8x + x^2 = 8 \\ y = -x+7 \end{cases}$

ssi $\begin{cases} 2x^2 - 16x + 24 = 0 \\ y = -x+7 \end{cases}$

$\Delta = b^2 - 4ac = 64 > 0$

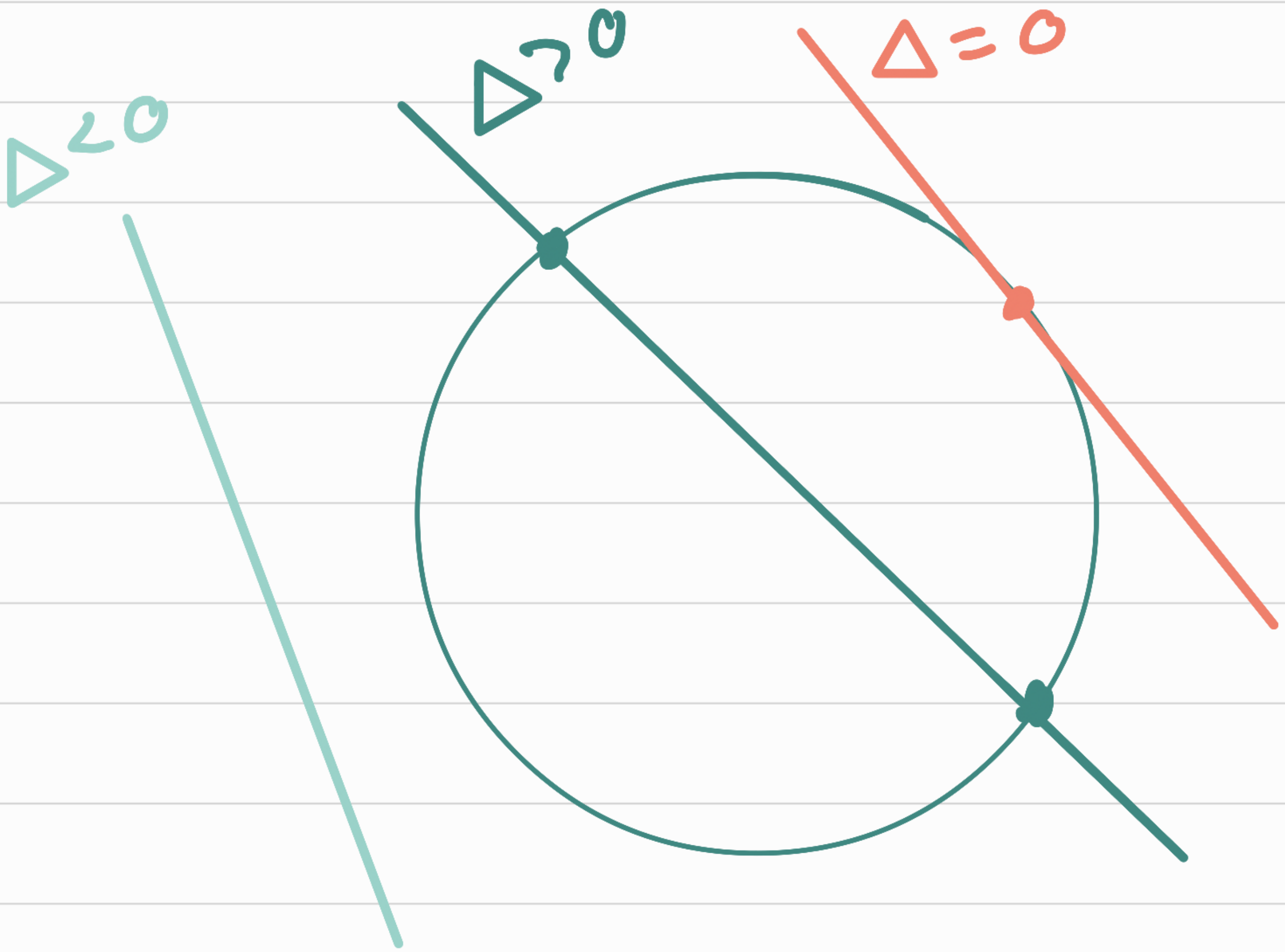
$x_1 = \dfrac{-b-\sqrt{\Delta}}{2a} = 2$

$$x_2 = \frac{-b+\sqrt{\Delta}}{2a} = 6$$

$$y_1 = -x_1 + 7 = 5$$

$$y_2 = -x_2 + 7 = 1$$

donc les points d'intersections sont $(2\,;5)$ et $(6\,;1)$.



exercice 13 :

1) $M(x,y) \in (\Delta) \cap \mathcal{P}$

ssi $\begin{cases} x - 2y - 3 = 0 \\ y = x^2 - 8x + 15 \end{cases}$

ssi $\begin{cases} x - 2(x^2 - 8x + 15) - 3 = 0 \\ y = x^2 - 8x + 15 \end{cases}$

ssi $\begin{cases} x - 2x^2 + 16x - 30 - 3 = 0 \\ y = x^2 - 8x + 15 \end{cases}$

$$\begin{cases} -2x^2 + 17x - 33 = 0 \\ y = x^2 - 8x + 15 \end{cases}$$

$$\Delta = b^2 - 4ac = 25 > 0$$

$$x_1 = \frac{-b - \sqrt{\Delta}}{2a} = 5{,}5$$

$$x_2 = \frac{-b + \sqrt{\Delta}}{2a} = 3$$

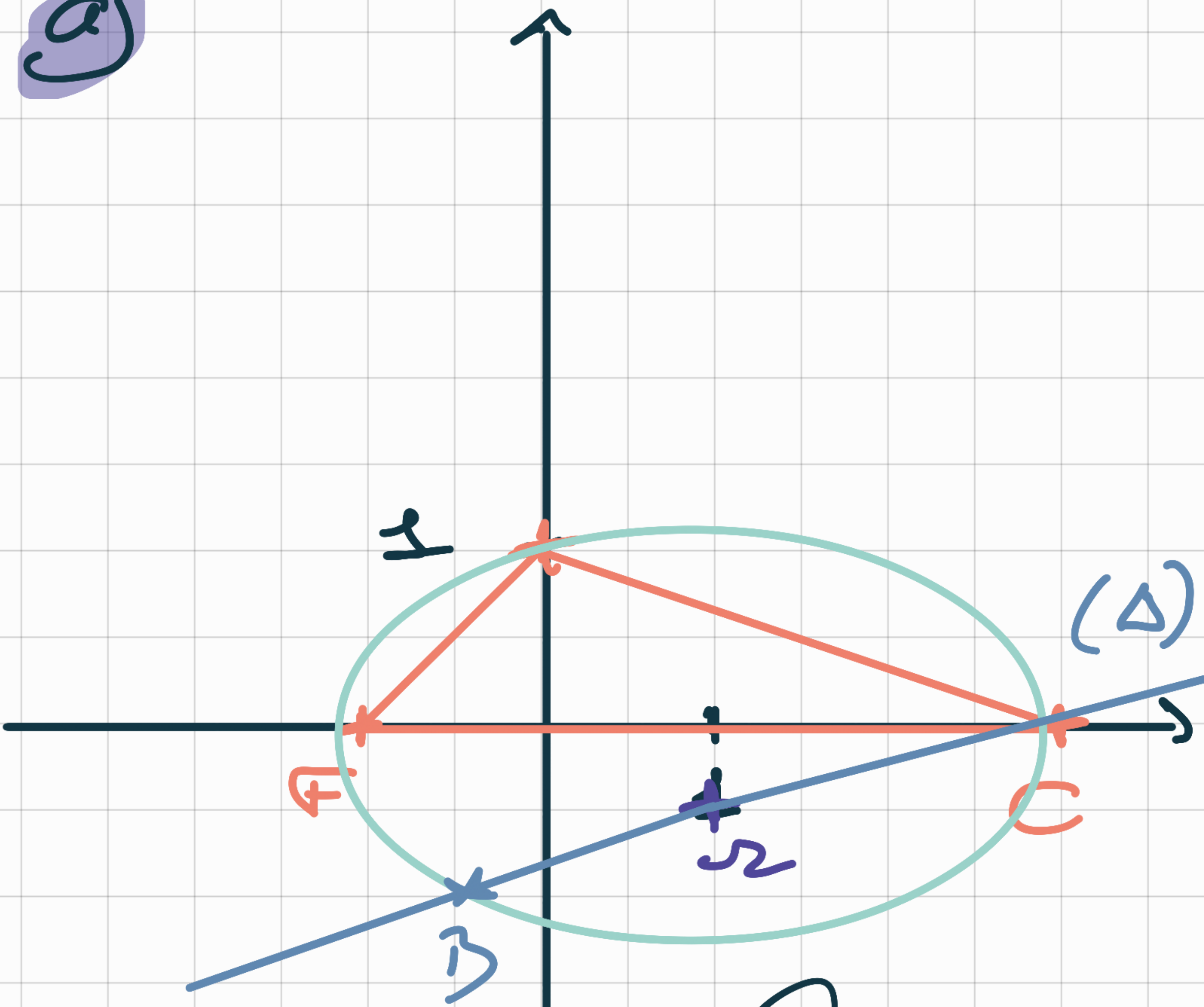
$$y_1 = x_1^2 - 8x_1 + 15 = 1{,}25$$

$$y_2 = x_2^2 - 8x_2 + 15 = 0$$

donc $D(5{,}5 ; 1{,}25)$

$C(3 ; 0)$

2) a)



?

0

b) $C \in (\Delta)$

- $\Omega(1;-1) \in (\Delta)$

↳ car $1-2\times -1-3=0$

$$\Omega\left(\frac{x_C+x_B}{2};\frac{y_C+y_B}{2}\right)$$

$$(1;-1)=\left(\frac{3+x_B}{2};\frac{0+y_B}{2}\right)$$

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

$$\frac{y_B}{2}=-1 \Rightarrow y_B=-2$$

$\Rightarrow$ faire méthode classique