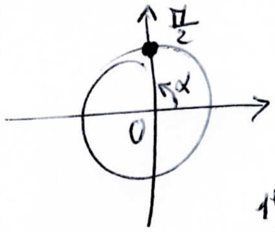
$$2\cos(\alpha) + 3\sin(\alpha) = 3 \quad \text{et} \quad \alpha \in \mathbb{R}$$

$$\Leftrightarrow x = \cos(\alpha) \text{ et } y = \sin(\alpha) \text{ et } 2x + 3y = 3 \text{ et } x = \frac{3-3y}{2}$$
$$\text{et } x^2 + y^2 = 1$$

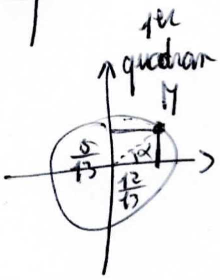
$$\Leftrightarrow \begin{cases} \cos(\alpha) = 0 \quad \text{et } \sin(\alpha) = 1 \\ \text{ou} \\ \cos(\alpha) = \frac{12}{13} \quad \text{et } \sin(\alpha) = \frac{5}{13} \end{cases}$$

$$\Leftrightarrow \alpha = \frac{\pi}{2} + k2\pi$$



ou

$$\cos(\alpha) = \frac{12}{13} \cong \cos(0{,}39)$$
et
$$\sin(\alpha) = \frac{5}{13} \cong \cos(0{,}39)$$
$$\text{et } \alpha \cong 0{,}39 + k2\pi$$



$$\Leftrightarrow \alpha \in \left\{ \frac{\pi}{2} + k2\pi \,;\, 0{,}39 + k2\pi \right\}$$

<u>Coin brico</u>

$$\left(\frac{3-3y}{2}\right)^2 + y^2 = 1$$
$$\Leftrightarrow 9y^2 - 18y + 9 + 4y^2 = 4$$
$$\Leftrightarrow 13y^2 - 18y + 5 = 0$$
$$\Leftrightarrow 13y^2 - 13y - 5y + 5 = 0$$
$$\Leftrightarrow 13y(y-1) - 5(y-1) = 0$$
$$\Leftrightarrow (y-1)(13y-5) = 0$$
$$* \text{ si } y = \frac{5}{13}, \quad x = \frac{3 - 3\cdot\frac{5}{13}}{2} = \frac{24}{2\cdot 13} = \frac{12}{13}$$

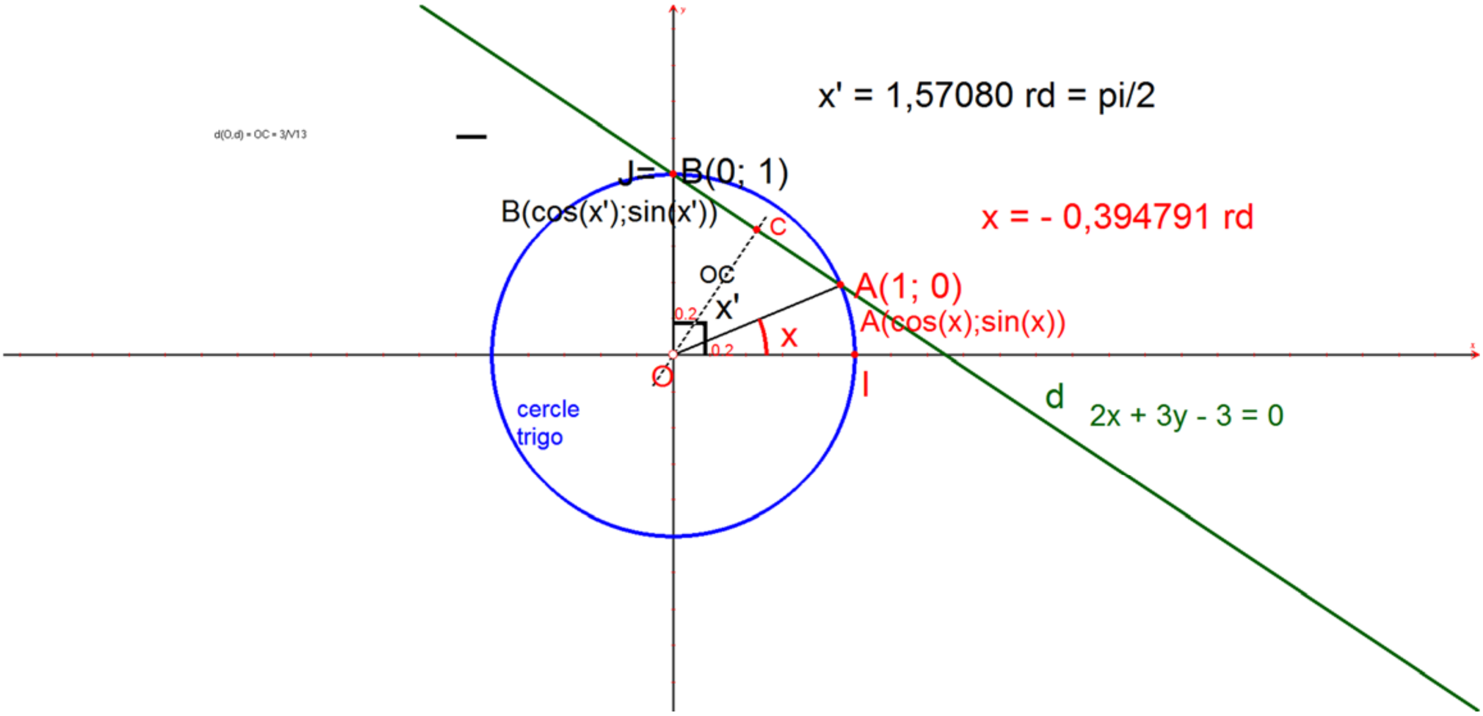
autre méthode :

$$2\cos(\alpha) + 3\sin(\alpha) = 3 \quad \text{et} \quad \alpha \in \mathbb{R}$$
$$\Leftrightarrow \frac{2}{\sqrt{13}}\cos(\alpha) + \frac{3}{\sqrt{13}}\sin(\alpha) = \frac{3}{\sqrt{13}}$$
$$\Leftrightarrow \cos(\beta)\cos(\alpha) + \sin(\beta)\sin(\alpha) = \cos(\gamma)$$
$$\Leftrightarrow \cos(\alpha - \beta) = \cos(\gamma)$$
$$\Leftrightarrow \alpha - \beta = \pm\gamma + k2\pi$$
$$\Leftrightarrow \alpha = \beta \pm \gamma + k2\pi$$
$$\Leftrightarrow \alpha \in \left\{ \underbrace{\beta + \gamma}_{\simeq 1{,}57 = \frac{\pi}{2}} + k2\pi \,;\, \underbrace{\beta - \gamma}_{\simeq 0{,}39} + k2\pi \right\}$$

ici $a = 2$
$b = 3$
$c = 3$

$$\text{et } \sqrt{a^2 + b^2} = \sqrt{13}$$
$$\text{et } \frac{3}{\sqrt{13}} < 1$$
$$\Leftrightarrow 3 < \sqrt{13}$$
$$\Leftrightarrow 9 < 13 \ \checkmark$$

$$* \cos(\gamma) = \frac{3}{\sqrt{13}} \cong \cos(0{,}59)$$
$$\Leftrightarrow \gamma \cong \pm 0{,}59 + k2\pi$$
$$* \begin{cases} \cos(\beta) = \frac{2}{\sqrt{13}} \\ \sin(\beta) = \frac{3}{\sqrt{13}} \end{cases} \Leftrightarrow \alpha \cong 0{,}98 + k2\pi$$



d(O,d) = OC = 3/V13
x' = 1,57080 rd = pi/2
J= B(0; 1)
B(cos(x');sin(x'))
C
x = - 0,394791 rd
OC
x'
A(1; 0)
A(cos(x);sin(x))
0.2
0.2
x
O
I
d
2x + 3y - 3 = 0
cercle
trigo