

Ex. 2

1. $q: x - 2y + 9 = 0$

$$\begin{aligned} A: -6 \cdot 1 - 2 \cdot 5 + c &= 0 \\ -6 - 10 + c &= 0 \\ c &= 16 \end{aligned}$$

$$\underline{x - 2y + 16 = 0}$$

2. $3x + 2y + 3 = 0 \quad \vec{u}(3, 2) \Rightarrow \vec{v}(-2, 3)$

$$-2x + 3y + c = 0$$

$$\begin{aligned} B: -2 \cdot 2 + 3 \cdot (-5) + c &= 0 \\ -4 + (-15) + c &= 0 \\ -4 - 15 + c &= 0 \\ c &= 19 \end{aligned}$$

$$\begin{aligned} -2x + 3y + 19 &= 0 \quad / \cdot (-1) \\ \underline{2x - 3y - 19 &= 0} \end{aligned}$$

3.

a: $5x - 8y + 24 = 0$

b: $4x + 4y + 1 = 0 \quad / : 2$

$$\begin{aligned} 5x - 8y + 24 &= 0 \\ 8x + 8y + 2 &= 0 \\ \underline{13x + 26 &= 0} \\ 13x &= -26 \\ x &= -2 \end{aligned}$$

$$\begin{aligned} 5x - 8y + 24 &= 0 \\ 5 \cdot (-2) - 8y + 24 &= 0 \\ -8y &= -14 \\ y &= \frac{14}{8} = \frac{7}{4} \end{aligned}$$

$$\underline{P(-2, \frac{7}{4})}$$

Ex. 3

1. $2x - 6y + 5 = 0$

$$y = \frac{-2x + 5}{6} \quad / \cdot 2$$

$$\begin{aligned} 2x - 6y + 5 &= 0 \\ 2y + 6x - 15 &= 0 \quad / \cdot 3 \\ \underline{2x - 6y + 15 &= 0} \\ 18x + 6y - 45 &= 0 \\ \underline{20x - 40 &= 0} \\ 20x &= 40 \\ x &= 2 \end{aligned}$$

$$\begin{aligned} 2x - 6y + 5 &= 0 \\ 2 \cdot 2 - 6y + 5 &= 0 \\ 4 + 5 - 6y &= 0 \\ -6y &= -9 \\ y &= \frac{9}{6} = \frac{3}{2} \end{aligned}$$

$$\underline{P(2, \frac{3}{2})}$$

$$\begin{aligned} m_1 \cdot m_2 &= 0 \\ (2, -6) \cdot (6, 2) &= 12 - 12 = 0 \\ \text{donc perpendiculaires} \end{aligned}$$

2. a) $\vec{u}(3, 2) \Rightarrow \vec{v}(2, -3)$

$$\begin{aligned} 2x - 3y + c &= 0 \\ A: 2 \cdot (-2) - 3 \cdot (4) + c &= 0 \\ -4 - 12 + c &= 0 \\ c &= 16 \end{aligned}$$

$$\underline{2x - 3y + 16 = 0}$$

b) $\vec{u}(2, -3) \Rightarrow \vec{v}(3, 2)$

$$\begin{aligned} 3x + 2y + c &= 0 \\ A: 3 \cdot (-2) + 2 \cdot 4 + c &= 0 \\ -6 + 8 + c &= 0 \\ c &= -2 \end{aligned}$$

$$\begin{aligned} 3x + 2y - 2 &= 0 \\ \underline{-3x - 2y + 2 &= 0} \end{aligned}$$

Ex. 4

1. Médiatrice issue de B ($\perp BK$)

$$\Pi \text{ (milieu de } AC) = \frac{A+C}{2} = (\frac{3}{2}, -\frac{1}{2})$$

$$\vec{B\Pi} = \Pi - B = (\frac{3}{2} + 3), (-\frac{1}{2} - 0) \Rightarrow (\frac{9}{2}, -\frac{1}{2})$$

$$N(x, y) \in B\Pi \Leftrightarrow \vec{BN}(x - \frac{3}{2}, y + \frac{1}{2}) \parallel \vec{B\Pi}(\frac{9}{2}, -\frac{1}{2})$$

$$(x - \frac{3}{2})(-\frac{1}{2}) - (y + \frac{1}{2}) \cdot (\frac{9}{2}) = 0$$