

Exercice 1

$[AB] // [KD]$ et $[AE] // [KF]$

$$\begin{aligned} \text{Donc : } 5x - 20^\circ &= 60^\circ - 3x \\ 5x + 3x &= 60^\circ + 20^\circ \\ 8x &= 80^\circ \\ x &= \frac{80^\circ}{8} = 10^\circ \end{aligned}$$

On a $\hat{A}CK$ et $\hat{B}AC$ deux angles alternes-internes,

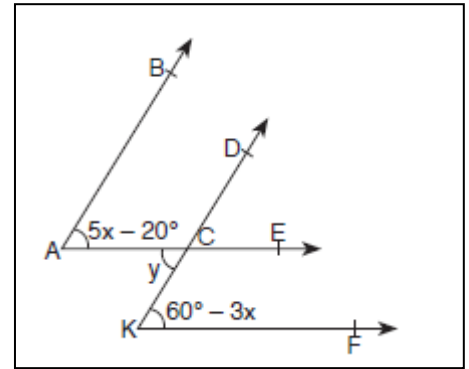
Donc : $\hat{A}CK = \hat{B}AC$

$$\hat{A}CK = 5x - 20^\circ$$

$$\hat{A}CK = 5 \times 10^\circ - 20^\circ$$

$$\hat{A}CK = 50^\circ - 20^\circ$$

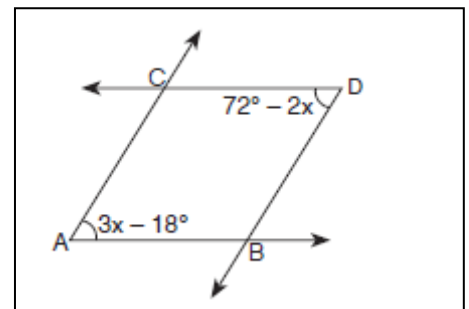
Par suite : $y = \hat{A}CK = 30^\circ$



Exercice 2

$[AC] // [DB]$ et $[AB] // [DC]$

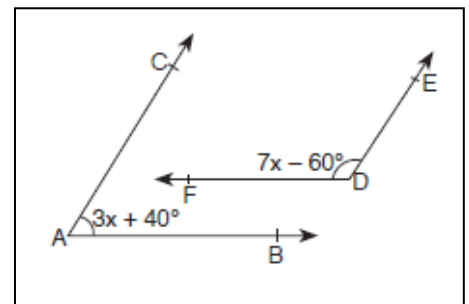
$$\begin{aligned} \text{Donc : } 72^\circ - 2x &= 3x - 18^\circ \\ 3x + 2x &= 72^\circ + 18^\circ \\ 5x &= 90^\circ \\ x &= \frac{90^\circ}{5} = 18^\circ \end{aligned}$$



Exercice 3

$[AC] // [DE]$ et $[AB] // [DF]$

$$\begin{aligned} \text{Donc : } (3x + 40^\circ) + (7x - 60^\circ) &= 180^\circ \\ 10x - 20^\circ &= 180^\circ \\ 10x &= 180^\circ + 20^\circ \\ 10x &= 200^\circ \\ x &= \frac{200^\circ}{10} = 20^\circ \end{aligned}$$



Exercice 4

$[AC] // [DB]$ et $[AB] // [DF]$

Donc : $\hat{BAC} + x = 180^\circ$

On a : $\hat{BAC} = 2\hat{BAE}$

D'où : $2\hat{BAE} + x = 180^\circ$ (1)

Dans le triangle ABE , on a :

$$\hat{BAE} + \hat{ABE} + \hat{AEB} = 180^\circ$$

$$\hat{BAE} + x + 50^\circ = 180^\circ$$
 (2)

De (1) et (2) on déduit : $2\hat{BAE} + x = \hat{BAE} + x + 50^\circ$

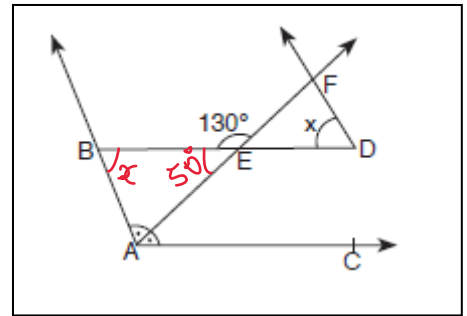
$$\hat{BAE} = 50^\circ$$

Donc : $50^\circ + x + 50^\circ = 180^\circ$ (2)

$$x + 100^\circ = 180^\circ$$
 (2)

$$x = 180^\circ - 100^\circ$$
 (2)

$$x = 80^\circ$$



Exercice 5

$[AB] \perp [CB]$ et $[AD] \perp [CD]$

Donc : $\hat{BCD} + \hat{BAD} = 180^\circ$

$$[180^\circ - (40^\circ + x)] + (70^\circ - 2x) = 180^\circ$$

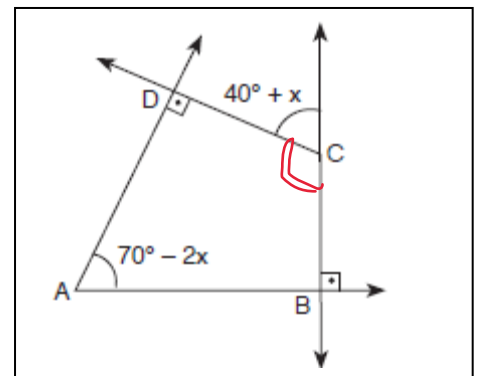
$$140^\circ - x + 70^\circ - 2x = 180^\circ$$

$$-3x + 210^\circ = 180^\circ$$

$$3x = 210^\circ - 180^\circ$$

$$3x = 30^\circ$$

$$x = \frac{30^\circ}{3} = 10^\circ$$



Exercice 6

$[AB] \perp [DB]$ et $[AE] \perp [DE]$.

Donc : $5x - 4^\circ = 3x + 20^\circ$

$$5x - 3x = 20^\circ + 4^\circ$$

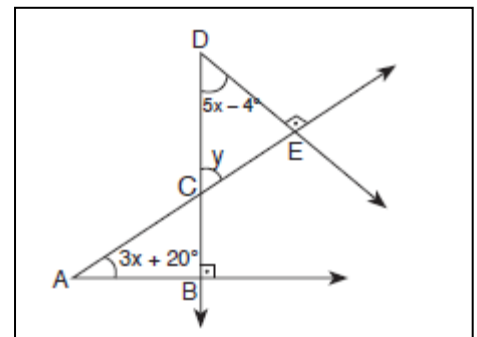
$$2x = 24^\circ$$

$$x = \frac{24^\circ}{2} = 12^\circ$$

Dans le triangle rectangle CDE , nous avons :

$$y + (5x - 4^\circ) = 90^\circ$$

$$y + (5 \times 12^\circ - 4^\circ) = 90^\circ$$



$$y + 56^\circ = 90^\circ$$

$$y = 90^\circ - 56^\circ$$

$$y = 34^\circ$$

Exercice 7

$[BA) \perp [EA)$ et $[BD) \perp [ED)$

Donc :

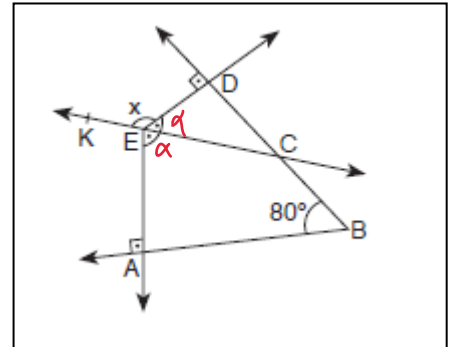
$$\widehat{AED} + \widehat{ABD} = 180^\circ$$

$$2\alpha + 80^\circ = 180^\circ$$

$$2\alpha = 180^\circ - 80^\circ$$

$$2\alpha = 100^\circ$$

$$\alpha = \frac{100^\circ}{2} = 50^\circ$$



On a :

$$\widehat{KED} + \widehat{DEC} = 180^\circ$$

$$x + \alpha = 180^\circ$$

$$x + 50^\circ = 180^\circ$$

$$x = 180^\circ - 50^\circ$$

$$x = 130^\circ$$

Exercice 8

$[BA) \perp [CA)$ et $[BD) \perp [CD)$.

Donc :

$$\widehat{ABD} = \widehat{ACE}$$

$$2\alpha = 36^\circ$$

$$\alpha = \frac{36^\circ}{2} = 18^\circ$$

Dans le triangle rectangle ABF , nous avons :

$$\widehat{AFB} + \widehat{ABF} = 90^\circ$$

$$x + \alpha = 90^\circ$$

$$x + 18^\circ = 90^\circ$$

$$x = 90^\circ - 18^\circ$$

$$x = 72^\circ$$

