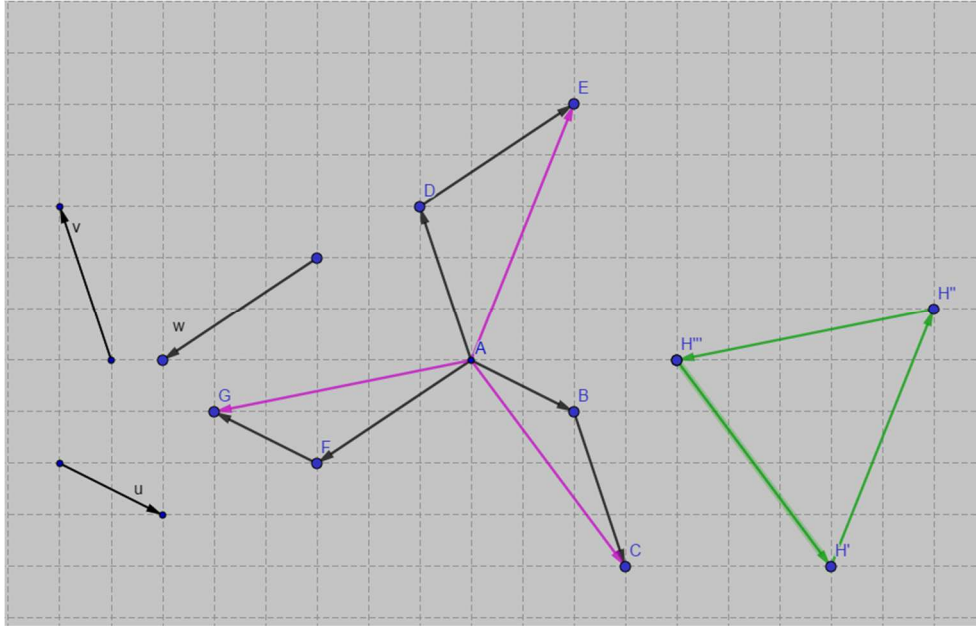


DS 2 : Corrigé

Exercice 1



$\overrightarrow{AC} + \overrightarrow{AE} + \overrightarrow{AG} = \vec{u} - \vec{v} + \vec{v} - \vec{w} + \vec{w} - \vec{u} = \vec{0}$ c'est ce qui explique que l'on retombe sur le point H à l'issue de la construction.

Exercice 2

$$\begin{aligned} 1^\circ \quad A(x) &= 2(x-3) - x(x-3) \\ &= 2x - 6 - x^2 + 3x = \underline{-x^2 + 5x - 6} \end{aligned}$$

$$\begin{aligned} B(x) &= (3x-5)(4x+1) - (2x+3)(3x-5) \\ &= 12x^2 + 3x - 20x - 5 - (6x^2 - 10x + 9x - 15) \\ &= 12x^2 + 3x - 20x - 5 - 6x^2 + 10x - 9x + 15 = \underline{6x^2 - 16x + 10} \end{aligned}$$

$$\begin{aligned} C(x) &= 2x - 3 - (2x+5)(2x-3) \\ &= 2x - 3 - (4x^2 - 6x + 10x - 15) \\ &= 2x - 3 - 4x^2 + 6x - 10x + 15 = \underline{-4x^2 - 2x + 12} \end{aligned}$$

2°

$$\begin{aligned} A(x) &= 2(x-3) - x(x-3) \\ &= \underline{(x-3)(2-x)} \end{aligned}$$

$$\begin{aligned} B(x) &= (3x-5)(4x+1) - (2x+3)(3x-5) \\ &= (3x-5)[4x+1 - (2x+3)] \\ &= (3x-5)(4x+1-2x-3) = \underline{(3x-5)(2x-2)} \end{aligned}$$

$$\begin{aligned} C(x) &= 2x - 3 - (2x+5)(2x-3) \\ &= (2x-3)[1 - (2x+5)] \\ &= (2x-3)(1-2x+5) = \underline{(2x-3)(-2x+6)} \end{aligned}$$

$$3^\circ \quad D(x) = 2x^2 - 6x - 3(x-3)$$

$$\begin{aligned} D(x) &= 2x(x-3) - 3(x-3) \\ &= \underline{(x-3)(2x-3)} \end{aligned}$$

Exercice 3

Partie 1 :

$$2x - 3 = \frac{x}{2} + 4 \Leftrightarrow 2x - \frac{x}{2} = 3 + 4 \Leftrightarrow \frac{3}{2}x = 7 \Leftrightarrow x = 7 \times \frac{2}{3} \Leftrightarrow x = \underline{\frac{14}{3}}$$

Partie 2 :

	Contenance	On consomme	Il reste
Modèle A	$x + 6$	$\frac{3}{4}(x + 6)$	$\frac{1}{4}(x + 6)$
Modèle B	x	40	$x - 40$

$$\frac{x+6}{4} + 5 = x - 40 \Leftrightarrow \frac{x+6}{4} + \frac{20}{4} = \frac{4x}{4} - \frac{160}{4}$$

$$\text{Donc } x + 6 + 20 = 4x - 160 \Leftrightarrow x - 4x = -6 - 20 - 160 \Leftrightarrow -3x = -186$$

$$\text{D'où } x = \frac{186}{3} = 62$$

Le réservoir du modèle B contient 62 litres alors que celui du modèle A contient 68 litres.