

FA302 Combinez!

1. Décris et explique chacune des étapes ci-dessous.

$$\begin{array}{ccc}
 \left\{ \begin{array}{l} 3x + 4y = 30 \\ 5x - y = 4 \end{array} \right. & \begin{array}{l} \cdot 5 \\ \cdot (-3) \end{array} & \left\{ \begin{array}{l} 3x + 4y = 30 \\ 5x - y = 4 \end{array} \right. & \begin{array}{l} \cdot 1 \\ \cdot 4 \end{array} \\
 \downarrow & & \downarrow & \\
 \left\{ \begin{array}{l} 15x + 20y = 150 \\ -15x + 3y = -12 \end{array} \right. & & \left\{ \begin{array}{l} 3x + 4y = 30 \\ 20x - 4y = 16 \end{array} \right. & \\
 \downarrow & & \downarrow & \\
 23y = 138 & & 23x = 46 & \\
 \downarrow & & \downarrow & \\
 y = 6 & \longrightarrow & \left\{ \begin{array}{l} x = 2 \\ y = 6 \end{array} \right. & \longleftarrow x = 2
 \end{array}$$

Vérification: $3 \cdot 2 + 4 \cdot 6 \stackrel{?}{=} 30$
 $5 \cdot 2 - 6 \stackrel{?}{=} 4$

La solution du système est: $S = \{(2 ; 6)\}$

2. Résous ces systèmes selon la même méthode.

a) $\left\{ \begin{array}{l} 4x + 3y = 10 \\ -2x + 5y = 8 \end{array} \right.$

d) $\left\{ \begin{array}{l} 3x - y = 5 \\ 6x - 2y = 10 \end{array} \right.$

g) $\left\{ \begin{array}{l} 2x - y = 4 \\ 4x - 2y = 10 \end{array} \right.$

b) $\left\{ \begin{array}{l} 6x + 2y = -18 \\ 5x - 6y = -15 \end{array} \right.$

e) $\left\{ \begin{array}{l} 6x - 11y = -4 \\ 8x - 2y = 20 \end{array} \right.$

h) $\left\{ \begin{array}{l} 0,5x + 2y = 5,4 \\ 5x - 5y = 49 \end{array} \right.$

c) $\left\{ \begin{array}{l} x + y = 12 \\ x - y = 2 \end{array} \right.$

f) $\left\{ \begin{array}{l} 2y = 7x + 2 \\ 3y = 12 - 5x \end{array} \right.$

i) $\left\{ \begin{array}{l} 4x - 9y = 12 \\ 13x - 15y = 1 \end{array} \right.$