

Exercice n°9

$$2x + \frac{3}{2} = 4x - 6 \Leftrightarrow 2x + \frac{3}{2} - 2x = 4x - 6 - 2x$$

$$\Leftrightarrow \frac{3}{2} = 2x - 6$$

$$\Leftrightarrow \frac{3}{2} + 6 = 2x - 6 + 6$$

$$\Leftrightarrow \frac{15}{2} = 2x$$

$$\Leftrightarrow x = \frac{15}{4}$$

$$S = \left\{ \frac{15}{4} \right\}$$

$$-\frac{x}{6} + \frac{1}{3} = \frac{-5x}{7} - \frac{8}{5} \Leftrightarrow -\frac{x}{6} + \frac{1}{3} + \frac{x}{6} = \frac{-5x}{7} - \frac{8}{5} + \frac{x}{6}$$

$$\Leftrightarrow \frac{1}{3} = -\frac{8}{5} - \frac{5x \times 6}{7 \times 6} + \frac{x \times 7}{6 \times 7}$$

$$\Leftrightarrow \frac{1}{3} = -\frac{8}{5} - \frac{30x}{42} + \frac{7x}{42}$$

$$\Leftrightarrow \frac{1 \times 5}{3 \times 5} + \frac{8 \times 3}{5 \times 3} = -\frac{8}{5} - \frac{23x}{42} + \frac{8}{5}$$

$$\Leftrightarrow \frac{5}{15} + \frac{24}{15} = -\frac{23x}{42}$$

$$\Leftrightarrow \frac{29}{15} = -\frac{23x}{42}$$

$$\Leftrightarrow x = \frac{29}{\frac{15}{3 \times 5}} \times \frac{42}{-23} \quad 2 \times 3 \times 7$$

$$\Leftrightarrow x = \frac{29 \times 14}{3 \times (-23)}$$

$$\Leftrightarrow x = -\frac{406}{115}$$

$$\mathcal{S} = \left\{ -\frac{406}{115} \right\}$$

$$9x + \frac{1}{8} = -\frac{4}{5}x + \frac{3}{7} \Leftrightarrow 9x + \frac{1}{8} + \frac{4}{5}x = -\frac{4}{5}x + \frac{3}{7} + \frac{4}{5}x$$

$$\Leftrightarrow \frac{9 \times 5}{5}x + \frac{4}{5}x + \frac{1}{8} = \frac{3}{7}$$

$$\Leftrightarrow \frac{49}{5}x + \frac{1}{8} - \frac{1}{8} = \frac{3 \times 8}{7 \times 8} - \frac{1 \times 7}{8 \times 7}$$

$$\Leftrightarrow \frac{49}{5}x = \frac{17}{56}$$

$$\Leftrightarrow x = \frac{17}{56} \times \frac{5}{49}$$

$$\Leftrightarrow x = \frac{85}{2744}$$

$$S = \left\{ \frac{85}{2744} \right\}$$

$$\frac{x}{1} + \frac{25}{14} = -\frac{12 \times 8}{5 \times 8} - \frac{28 \times 5}{8 \times 5} \Leftrightarrow x + \frac{25}{14} = -\frac{96}{40} - \frac{140}{40}$$

$$\Leftrightarrow x + \frac{25}{14} = -\frac{236}{40}$$

$$\Leftrightarrow x + \frac{25}{14} = -\frac{59}{10}$$

$$\Leftrightarrow x + \frac{25}{14} - \frac{25}{14} = -\frac{59 \times 7}{10 \times 7} - \frac{25 \times 5}{14 \times 5}$$

$$\Leftrightarrow x = -\frac{413}{70} - \frac{125}{70}$$

$$\Leftrightarrow x = -\frac{538}{70}$$

$$\Leftrightarrow x = -\frac{269}{35}$$

$$S = \left\{ -\frac{269}{35} \right\}$$

$$-3x - \frac{5}{4} = 5x + \frac{7}{8} \Leftrightarrow -3x - \frac{5}{4} + 3x = 5x + \frac{7}{8} + 3x$$

$$\Leftrightarrow -\frac{5}{4} = 8x + \frac{7}{8}$$

$$\Leftrightarrow -\frac{5^{\cancel{2}}}{4 \times \cancel{2}} - \frac{7}{8} = 8x + \frac{7}{8} - \frac{7}{8}$$

$$\Leftrightarrow -\frac{10}{8} - \frac{7}{8} = 8x$$

$$\Leftrightarrow -\frac{17}{8} = 8x$$

$$\Leftrightarrow x = -\frac{17}{64}$$

$$S = \left\{ -\frac{17}{64} \right\}$$

$$\frac{3}{4}x - \frac{6}{9} = -\frac{3}{2}x + \frac{7}{4} \Leftrightarrow \frac{3}{4}x - \frac{6}{9} + \frac{3}{2}x = -\frac{3}{2}x + \frac{7}{4} + \frac{3}{2}x$$

$$\Leftrightarrow \frac{9}{4}x - \frac{6}{9} = \frac{7}{4}$$

$$\Leftrightarrow \frac{9}{4}x - \frac{6}{9} + \frac{6}{9} = \frac{7}{4} + \frac{6}{9}$$

$$\Leftrightarrow \frac{9}{4}x = \frac{63}{36} + \frac{24}{36}$$

$$\Leftrightarrow \frac{9}{4}x = \frac{87}{36}$$

$$\Leftrightarrow \frac{9}{4}x = \frac{3 \cdot 29}{3 \cdot 12}$$

$$\Leftrightarrow \frac{9}{4}x = \frac{29}{12}$$

$$\Leftrightarrow x = \frac{29}{12} \times \frac{4}{9}$$

$$\Leftrightarrow x = \frac{29}{27}$$

$$y = \left\{ \frac{29}{27} \right\}$$

$$\frac{1}{4}x + \frac{2}{5} = \frac{9}{8}x + \frac{1}{3} \Leftrightarrow \frac{1}{4}x + \frac{2}{5} - \frac{1}{4}x = \frac{9}{8}x + \frac{1}{3} - \frac{1}{4}x$$

$$\Leftrightarrow \frac{2}{5} = \frac{1}{3} + \frac{9}{8}x - \frac{2}{8}x$$

$$\Leftrightarrow \frac{2}{5} = \frac{1}{3} + \frac{7}{8}x$$

$$\Leftrightarrow \frac{2 \times 3}{5 \times 3} - \frac{1 \times 5}{3 \times 5} = \frac{1}{3} + \frac{7}{8}x - \frac{1}{3}$$

$$\Leftrightarrow \frac{1}{15} = \frac{7}{8}x$$

$$\Leftrightarrow x = \frac{8}{105}$$

$$S = \left\{ \frac{8}{105} \right\}$$

$$\frac{244}{131}x + 2 \times \frac{66}{244}x = \frac{243}{131}x + 6 \times \frac{11}{122}$$

$\frac{2 \times 33}{2 \times 2 \times 61}$
 $\frac{2 \times 3}{2 \times 61}$

$$\Leftrightarrow \frac{244}{131}x + \frac{33}{61}x \Leftrightarrow \frac{243}{131}x + \frac{33}{61}$$

$$\Leftrightarrow \frac{244}{131}x + \frac{33}{61}x - \frac{243}{131}x = \frac{243}{131}x + \frac{33}{61} - \frac{243}{131}x$$

$$\Leftrightarrow \frac{1 \times 61}{131 \times 61}x + \frac{33 \times 131}{61 \times 131} = \frac{33}{61}$$

$$\Leftrightarrow \frac{61x}{7931} + \frac{4323x}{7931} = \frac{33}{61}$$

$$\Leftrightarrow \frac{4384}{7931}x = \frac{33}{61}$$

$$\Leftrightarrow x = \frac{33}{61} \times \frac{7931}{4384}$$

$$y = \left\{ \frac{4323}{4384} \right\}$$

$$\Leftrightarrow x = \frac{263703}{267424}$$

$$\Leftrightarrow x = \frac{4323}{4384}$$