

Corrigé: Équations

Exercice 26

$$\begin{array}{lcl} a) & 8x - 34 = 5x - 13 & | -5x \\ & 3x - 34 = -13 & | +34 \\ & 3x = 21 & | :3 \\ & x = 7 & S = \{7\} \end{array}$$

$$\begin{array}{lcl} b) & -x + 2(x+9) = 5x - 4(x - \frac{9}{2}) & | CL \\ & -x + 2x + 18 = 5x - 4x + 18 & | CL \\ & x + 18 = x + 18 & | -x \\ & 18 = 18 & S = \mathbb{R} \end{array}$$

$$\begin{array}{lcl} c) & 12x - (4(42-x) - 9(5-x)) = 7x & | CL \\ & 12x - (168 - 4x - 45 + 9x) = 7x & | CL \\ & 12x - 168 + 4x + 45 - 9x = 7x & | CL \\ & 7x - 123 = 7x & | -7x \\ & -123 = 0 & S = \emptyset \end{array}$$

$$\begin{array}{lcl} d) & (9-2x)^2 = (4x-1)(5+x) - 24 & | CL \\ & 81 - 36x + 4x^2 = 20x - 5 + 4x^2 - x - 24 & | CL \\ & 4x^2 - 36x + 81 = 4x^2 + 19x - 29 & | -4x^2 \\ & -36x + 81 = 19x - 29 & | -19x \\ & -55x + 81 = -29 & | -81 \\ & -55x = -110 & | :(-55) \\ & x = 2 & S = \{2\} \end{array}$$

$$\begin{array}{lcl} e) & x - \frac{1}{2}x - \frac{1}{3}x - \frac{1}{4}x = \frac{5}{6} - \frac{1}{12}x & | CL \\ & \frac{12x}{12} - \frac{6x}{12} - \frac{4x}{12} - \frac{3x}{12} = \frac{5}{6} - \frac{1}{12}x & | CL \\ & -\frac{x}{12} = \frac{5}{6} - \frac{1}{12}x & | +\frac{1}{12}x \\ & 0 = \frac{5}{6} & S = \emptyset \end{array}$$

Exercice 26 (suite)

$$\begin{array}{lcl}
 f) \quad \frac{7x}{3} + \frac{3x-5}{6} = \frac{23x-15}{6} - \frac{9x}{10} + \frac{3}{2} & | & \text{Tout mettre au même dénominateur (30)} \\
 \frac{70x}{30} + \frac{5(3x-5)}{30} = \frac{5(23x-15)}{30} - \frac{27x}{30} + \frac{45}{30} & | & CL \\
 \frac{70x + 15x - 25}{30} = \frac{115x - 75 - 27x + 45}{30} & | & + 30 \\
 85x - 25 = 88x - 30 & | & - 88x \\
 -3x - 25 = -30 & | & + 25 \\
 -3x = -5 & | & : (-3) \\
 x = \frac{-5}{-3} = \frac{5}{3} & & S = \left\{ \frac{5}{3} \right\}
 \end{array}$$

$$\begin{array}{lcl}
 g) \quad 5 - (2x+3) = -2(x+1) & | & CL \\
 5 - 2x - 3 = -2x - 2 & | & CL \\
 -2x + 2 = -2x - 2 & | & + 2x \\
 2 = -2 & | & \\
 S = \emptyset & &
 \end{array}$$

$$\begin{array}{lcl}
 h) \quad x+5 = 2x+3 - (x-2) & | & CL \\
 x+5 = 2x+3 - x+2 & | & CL \\
 x+5 = x+5 & | & -x \\
 5 = 5 & & S = \mathbb{R}
 \end{array}$$

Exercice 27

$$\begin{array}{lcl}
 a) \quad 13 - (y+3) = 7 & | & CL \\
 13 - y - 3 = 7 & | & CL \\
 10 - y = 7 & | & -10 \\
 -y = -3 & | & : (-1) \\
 y = 3 & & S = \{3\}
 \end{array}$$

$$\begin{array}{lcl}
 b) \quad 3x - (8-x) = 0 & | & CL \\
 3x - 8 + x = 0 & | & CL \\
 4x - 8 = 0 & | & + 8 \\
 4x = 8 & | & : 4 \\
 x = 2 & & S = \{2\}
 \end{array}$$

Exercice 27 (suite)

$$c) 5 + (d-3) = 2 - (d+2)$$

$$5 + d - 3 = 2 - d - 2$$

$$d + 2 = -d$$

$$2 = -2d$$

$$-1 = d \quad S = \{-1\}$$

$$CL \quad d) 0 = 14 + 2x - (3x + 6) - 8x$$

$$CL \quad 0 = 14 + 2x - 3x - 6 - 8x$$

$$-d \quad 0 = -9x + 8 \quad +9x$$

$$: (-2) \quad 9x = 8 \quad : 9$$

$$x = \frac{8}{9} \quad S = \left\{\frac{8}{9}\right\}$$

$$e) 7u + (4-u) = -2 - (u+8)$$

$$7u + 4 - u = -2 - u - 8 \quad CL$$

$$6u + 4 = -u - 10 \quad +u$$

$$7u + 4 = -10 \quad -4$$

$$7u = -14 \quad : 7$$

$$u = -2 \quad S = \{-2\}$$

$$f) (5m+3) + (2m-4) = 9 - (2-3m) \quad CL$$

$$5m + 3 + 2m - 4 = 9 - 2 + 3m \quad CL$$

$$7m - 1 = 3m + 7 \quad -3m$$

$$4m - 1 = 7 \quad +1$$

$$4m = 8 \quad : 4$$

$$m = 2 \quad S = \{2\}$$

$$g) 110 - (9y-15) + 2y = 15 - 18y$$

$$110 - 9y + 15 + 2y = 15 - 18y \quad CL$$

$$-7y + 125 = -18y + 15 \quad +18y$$

$$11y + 125 = 15 \quad -125$$

$$11y = -110 \quad : 11$$

$$y = -10 \quad S = \{-10\}$$

$$h) x - ((3-6x) - (12x-9)) = x + 15 \quad CL$$

$$x - (3 - 6x - 12x + 9) = x + 15 \quad CL$$

$$x - 3 + 6x + 12x - 9 = x + 15 \quad CL$$

$$19x - 12 = x + 15 \quad -x$$

$$18x - 12 = 15 \quad +12$$

$$18x = 27 \quad : 18$$

$$x = \frac{27}{18} \stackrel{:9}{=} \frac{3}{2} \quad S = \left\{\frac{3}{2}\right\}$$

$$i) 3x + 100 = \frac{x}{3} + \frac{x}{2} - 4$$

$$\frac{18x}{6} + \frac{600}{6} = \frac{2x}{6} + \frac{3x}{6} - \frac{24}{6} \quad \cdot 6$$

$$18x + 600 = 2x + 3x - 24 \quad CL$$

$$18x + 600 = 5x - 24 \quad -5x$$

$$13x + 600 = -24 \quad -600$$

$$13x = -624 \quad : 13$$

$$x = -48 \quad S = \{-48\}$$

tout mettre au même dénominateur (6)

Exercice 2 (suite)

j) $\frac{5x-11}{4} - \frac{x-1}{10} = \frac{11x-1}{12}$ | Tout mettre au même dénominateur (60)

$$\frac{15(5x-11)}{60} - \frac{6(x-1)}{60} = \frac{5(11x-1)}{60} \quad \cdot 60$$

$$15(5x-11) - 6(x-1) = 5(11x-1) \quad CL$$

$$75x - 165 - 6x + 6 = 55x - 5 \quad CL$$

$$69x - 159 = 55x - 5 \quad -55x$$

$$14x - 159 = -5 \quad +159$$

$$14x = 154 \quad :14$$

$$x = \frac{154}{14} = 11 \quad S = \{11\}$$

k) $\frac{x+1}{2} - \frac{6x+7}{8} = \frac{4-3x}{5} - \frac{1}{8}$ | même dénominateur (40)

$$\frac{20(x+1)}{40} - \frac{5(6x+7)}{40} = \frac{8(4-3x)}{40} - \frac{5}{40} \quad \cdot 40$$

$$20(x+1) - 5(6x+7) = 8(4-3x) - 5 \quad CL$$

$$20x + 20 - 30x - 35 = 32 - 24x - 5 \quad CL$$

$$-10x - 15 = -24x + 27 \quad +24x$$

$$14x - 15 = 27 \quad +15$$

$$14x = 42 \quad :14$$

$$x = \frac{42}{14} = 3 \quad S = \{3\}$$

l) $\frac{x}{2} + \frac{x}{3} = 10$ | CL

$$\frac{3x}{6} + \frac{2x}{6} = \frac{60}{6} \quad \cdot 6$$

$$3x + 2x = 60 \quad CL$$

$$5x = 60 \quad :5$$

$$x = \frac{60}{5} = 12 \quad S = \{12\}$$

m) $\frac{2x}{7} + \frac{x}{11} = 4 + \frac{1}{7}$ | CL

$$\frac{22x}{77} + \frac{7x}{77} = \frac{308}{77} + \frac{11}{77} \quad \cdot 77$$

$$22x + 7x = 308 + 11 \quad CL$$

$$29x = 319 \quad :29$$

$$x = \frac{319}{29} = 11 \quad S = \{11\}$$

Exercice 27 (suite)

$\begin{aligned} n) \quad & \frac{1}{2}(3x-1) - \frac{1}{4}(4-x) = 0 \\ & \frac{3}{2}x - \frac{1}{2} - 1 + \frac{1}{4}x = 0 \\ & \frac{6x}{4} - \frac{2}{4} - \frac{4}{4} + \frac{1}{4}x = 0 \\ & 6x - 2 - 4 + x = 0 \\ & 7x - 6 = 0 \\ & 7x = 6 \end{aligned}$	$\left. \begin{array}{l} CL \\ CL \\ \cdot 4 \\ CL \\ + 6 \\ : 7 \end{array} \right\}$	$\begin{aligned} o) \quad & \frac{12-3x}{4} - \frac{3x-11}{3} = 1 \\ & \frac{3(12-3x)}{12} - \frac{4(3x-11)}{12} = \frac{12}{12} \\ & 3(12-3x) - 4(3x-11) = 12 \\ & 36 - 9x - 12x + 44 = 12 \\ & -21x + 80 = 12 \\ & -21x = -68 \end{aligned}$	$\left. \begin{array}{l} CL \\ \cdot 12 \\ CL \\ CL \\ - 80 \\ : (-21) \end{array} \right\}$
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$$x = \underline{6} \quad S = \left\{ \frac{6}{7} \right\}$$

$$x = \frac{-68}{-21} = \frac{68}{21} \quad S = \left\{ \frac{68}{21} \right\}$$

$\begin{aligned} p) \quad & \frac{x}{4} + \frac{943}{1000} = \frac{19x}{10} - \frac{1703}{250} \\ & \frac{250x}{1000} + \frac{943}{1000} = \frac{1900x}{1000} - \frac{6812}{1000} \\ & 250x + 943 = 1900x - 6812 \\ & -1650x + 943 = -6812 \\ & -1650x = -7755 \end{aligned}$	$\left. \begin{array}{l} CL \\ \cdot 1000 \\ - 1900x \\ - 943 \\ : (-1650) \end{array} \right\}$	$\begin{aligned} q) \quad & \frac{5}{6}(3x-7) = \frac{3x}{4} + 4 + \frac{2}{3} \\ & \frac{15x}{6} - \frac{35}{6} = \frac{3}{4}x + 4 + \frac{2}{3} \\ & \frac{30x}{12} - \frac{70}{12} = \frac{9x}{12} + \frac{48}{12} + \frac{8}{12} \\ & 30x - 70 = 9x + 48 + 8 \\ & 30x - 70 = 9x + 56 \\ & 21x - 70 = 56 \\ & 21x = 126 \end{aligned}$	$\left. \begin{array}{l} CL \\ CL \\ \cdot 12 \\ CL \\ - 9x \\ + 70 \\ : 21 \end{array} \right\}$
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$$x = \frac{-7755}{-1650} = \frac{47}{10} \quad S = \left\{ \frac{47}{10} \right\}$$

$$x = \frac{126}{21} = 6 \quad S = \{6\}$$

Exercice 28

a) Soit x le nombre cherché.

$$\begin{aligned} 10x - 10 &= 6x + 2 \\ 4x &= 12 \\ x &= 3 \end{aligned} \quad \left. \begin{array}{l} -6x + 10 \\ : 4 \end{array} \right\}$$

$$S = \{3\}$$

le nombre cherché est 3.

b) Soit x le nombre d'années passées.

$$\begin{aligned} 38 + x &= 2 \cdot (11 + x) \\ 38 + x &= 22 + 2x \\ -x &= -16 \end{aligned} \quad \left. \begin{array}{l} CL \\ -2x - 38 \\ : (-1) \end{array} \right\}$$

$$x = 16 \quad S = \{16\}$$

Dans 16 ans, le père aura le double de l'âge de son fils.

	père	fils
âge maintenant	38	11
âge dans x années	$38+x$	$11+x$

Exercice 28 (suite)

c) Soit x la longueur du parcours [km]

$$\text{1er jour} \quad \frac{1}{5}x + 70$$

$$\text{2e jour} \quad \frac{1}{4}x + 62$$

$$\frac{1}{5}x + 70 + \frac{1}{4}x + 62 = x \quad | \text{CL}$$

$$\frac{41x}{20} + \frac{1400}{20} + \frac{5x}{20} + \frac{1240}{20} = \frac{20x}{20} \quad | \cdot 20$$

$$9x + 2640 = 20x \quad | -9x$$

$$2640 = 11x \quad | :11$$

$$x = \frac{2640}{11} = 240 \quad S = \{240\}$$

Le parcours fait 240 km.

d) Soit x la longueur du côté du carré initial [cm]

$$(x+5)^2 = x^2 + 225 \quad | \text{CL}$$

$$x^2 + 10x + 25 = x^2 + 225 \quad | -x^2$$

$$10x + 25 = 225 \quad | -25$$

$$10x = 200 \quad | :10$$

$$x = 20 \quad S = \{20\}$$

La longueur du côté du carré initial mesure 20 cm.

e) Soit x la longueur du pont [m], $28x$: longueur de la colline, $11x$: longueur du pré

$$x + 28x + 11x = 4000 \quad | \text{CL}$$

$$40x = 4000 \quad | :40$$

$$x = 100 \quad S = \{100\}$$

La longueur du pont est de 100 m.

f) Soit x le 1er nombre, $x+3$: 2^e nombre, $(x+3)+3$: 3^e nombre

$$x + x+3 + (x+3)+3 = 30 \quad | \text{CL}$$

$$3x + 9 = 30 \quad | -9$$

$$3x = 21 \quad | :3$$

$$x = 7 \quad S = \{7\}$$

Les 3 nombres sont 7, 10 et 13.

Exercice 28 (suite)

g) Soit x le nombre cherché.

$$\begin{array}{lcl} 4x - \frac{1}{4}x = 30 & | & \cdot 4 \\ 16x - x = 120 & | & CL \\ 15x = 120 & | & :15 \\ x = 8 & S = \{8\} & \end{array}$$

Le nombre est 8.

h) Soit x le montant initial [CHF].

$$\begin{array}{lcl} x - \frac{1}{5}x - \frac{1}{4}x - \frac{1}{3}x = 520 & | & \cdot 60 \\ 60x - 12x - 15x - 20x = 31200 & | & CL \\ 13x = 31200 & | & :13 \\ x = 2400 & S = \{2400\} & \end{array}$$

Jean avait 2400 CHF.

i) Soit x l'âge de la personne.

$$\begin{array}{lcl} 2x + \frac{x}{2} + \frac{x}{4} + 1 = 100 & | & \cdot 4 \\ 8x + 2x + x + 4 = 400 & | & CL \\ 11x + 4 = 400 & | & -4 \\ 11x = 396 & | & :11 \\ x = 36 & S = \{36\} & \end{array}$$

La personne a 36 ans.

j) Soit x la longueur du côté a du triangle [cm], $x+2$ celle du côté b et $(x+2)+6$ celle du côté c .

$$\begin{array}{lcl} x + x+2 + x+2+6 = 43 & | & CL \\ 3x + 10 = 43 & | & -10 \\ 3x = 33 & | & :3 \\ x = 11 & S = \{11\} & \end{array}$$

Les côtés mesurent 11 cm, 13 cm et 19 cm.

Exercice 28 (suite)

k) Soit x l'angle α . $x+15$: angle β , $x+15+15$: angle γ

$$\begin{array}{rcl} x + x+15 + x + 30 & = & 180 \\ 3x + 45 & = & 180 \\ 3x & = & 135 \end{array} \quad \left| \begin{array}{l} \text{CL} \\ -45 \\ :3 \end{array} \right.$$

$$x = 45 \quad S = \{45\}$$

Les 3 angles mesurent 45° , 60° et 75° .

l) Soit x le nombre d'années passées

	Sapin	chêne
$250 + 12x = 85 + 45x$	planté $25m = 250cm$	$85cm$
$165 = 33x$	après x années $250 + x \cdot 12$	$85 + x \cdot 45$
$x = 5 \quad S = \{5\}$		

Après 5 ans, les deux arbres ont la même taille.

m) Soit x le montant reçu par les filles (pièces d'or).

$2x$: " par la femme
 $4x$: " par le fils

$$\begin{array}{rcl} x + x + 2x + 4x & = & 3600 \\ 8x & = & 3600 \\ x & = & 450 \end{array} \quad \left| \begin{array}{l} \text{CL} \\ :8 \end{array} \right.$$

$$S = \{450\}$$

Les filles reçoivent 450 pièces d'or, la femme 900 et le fils 1800.

Exercice 29

Soient x	la distance parcourue le	lundi [km]	
$2x$	"	mercredi	$x + 2x + 4x + 8x + 16x + 8x = 195$
$4x$	"	mercredi	$39x = 195$
$8x$	"	jeudi	
$16x$	"	Vendredi	$x = 5 \quad S = \{5\}$
$\frac{16x}{2}$	"	Samedi	

Le mercredi, il parcourt 20 km.

Exercise 30

$$a) \quad z + (z - 5) = 3 \quad | \quad CL$$

$$z + z - 5 = 3 \quad | \quad CL$$

$$2z - 5 = 3 \quad | \quad +5$$

$$2z = 8 \quad | \quad :2$$

$$z = 4 \quad S = \{4\}$$

$$b) \quad 4x - (2 - x) = x - 8 \quad | \quad CL$$

$$4x - 2 + x = x - 8 \quad | \quad CL$$

$$5x - 2 = x - 8 \quad | \quad -x + 2$$

$$4x = -6 \quad | \quad :4$$

$$x = \frac{-6}{4} = -\frac{3}{2} \quad S = \left\{-\frac{3}{2}\right\}$$

$$c) \quad 5t + (7 - t) = -1 \quad | \quad CL$$

$$5t + 7 - t = -1 \quad | \quad CL$$

$$4t + 7 = -1 \quad | \quad -7$$

$$4t = -8 \quad | \quad :4$$

$$t = -2 \quad S = \{-2\}$$

$$d) \quad 8t - (9 + 4t) - 5 = 7t - 6 \quad | \quad CL$$

$$8t - 9 - 4t - 5 = 7t - 6 \quad | \quad CL$$

$$4t - 14 = 7t - 6 \quad | \quad -7t + 14$$

$$-3t = 8 \quad | \quad :(-3)$$

$$t = -\frac{8}{3} \quad S = \left\{-\frac{8}{3}\right\}$$

$$e) \quad -9z = (7z + 15) - (10z - 8 + 5z) \quad | \quad CL$$

$$-9z = 7z + 15 - 10z + 8 - 5z \quad | \quad CL$$

$$-9z = -8z + 23 \quad | \quad +8z$$

$$-z = 23 \quad | \quad :(-1)$$

$$z = -23 \quad S = \{-23\}$$

$$f) \quad (5x + 3) - (2x - 2) = 23 \quad | \quad CL$$

$$5x + 3 - 2x + 2 = 23 \quad | \quad CL$$

$$3x + 5 = 23 \quad | \quad -5$$

$$3x = 18 \quad | \quad :3$$

$$x = 6 \quad S = \{6\}$$

$$g) \quad (x+1) + (x-2) - (x+3) = 0 \quad | \quad CL$$

$$x+1 + x-2 - x-3 = 0 \quad | \quad CL$$

$$x - 4 = 0 \quad | \quad +4$$

$$x = 4 \quad S = \{4\}$$

$$h) \quad -(10 - 8u) - (6 - 12u) = 2 - 4u \quad | \quad CL$$

$$-10 + 8u - 6 + 12u = 2 - 4u \quad | \quad CL$$

$$20u - 16 = 2 - 4u \quad | \quad +4u + 16$$

$$24u = 18 \quad | \quad :24$$

$$u = \frac{18}{24} = \frac{3}{4} \quad S = \left\{\frac{3}{4}\right\}$$

Exercice 30 (suite)

$$\begin{array}{lcl}
 \text{i)} & -(- (12x-9) + 8x - 60) = -(9+x) & | \text{ CL} \\
 & -(-12x+9 + 8x - 60) = -9-x & | \text{ CL} \\
 & 12x - 9 - 8x + 60 = -9-x & | \text{ CL} \\
 & 4x + 51 = -9-x & | +x - 51 \\
 & 5x = -60 & | :5 \\
 & x = -12 & S = \{-12\}
 \end{array}$$

$$\begin{array}{lcl}
 \text{j)} & (7x-6) + (6x-4) - (2-3x) = -4 & | \text{ CL} \\
 & 7x-6 + 6x-4 - 2 + 3x = -4 & | \text{ CL} \\
 & 16x - 12 = -4 & | +12 \\
 & 16x = 8 & | :16 \\
 & x = \frac{8}{16} = \frac{1}{2} & S = \{\frac{1}{2}\}
 \end{array}$$

$$\begin{array}{lcl}
 \text{k)} & 3x - \frac{1}{2}(4-x) = x - \frac{1}{3} & | \text{ CL} \\
 & 3x - 2 + \frac{1}{2}x = x - \frac{1}{3} & | \cdot 6 \\
 & 18x - 12 + 3x = 6x - 2 & | \text{ CL} \\
 & 21x - 12 = 6x - 2 & | -6x + 12 \\
 & 15x = 10 & | :15 \\
 & x = \frac{10}{15} = \frac{2}{3} & S = \{\frac{2}{3}\}
 \end{array}$$

$$\begin{array}{lcl}
 \text{l)} & \frac{2x}{5} - \frac{1}{3}\left(\frac{5x}{4} - 4\right) = x + \frac{27}{5} & | \text{ CL} \\
 & \frac{2x}{5} - \frac{5x}{12} + \frac{4}{3} = x + \frac{27}{5} & | \cdot 60 \\
 & 24x - 25x + 80 = 60x + 324 & | \text{ CL} \\
 & -x + 40 = 60x + 324 & | -60x - 80 \\
 & -61x = 244 & | :(-61) \\
 & x = -\frac{244}{61} = -4 & S = \{-4\}
 \end{array}$$

$$\begin{array}{lcl}
 \text{m)} & \frac{x-2}{3} - \frac{12-x}{2} = \frac{5x-36}{4} - 1 & | \cdot 12 \\
 & 4(x-2) - 6(12-x) = 3(5x-36) - 12 & | \text{ CL} \\
 & 4x - 8 - 72 + 6x = 15x - 108 - 12 & | \text{ CL} \\
 & 10x - 80 = 15x - 120 & | -15x + 80 \\
 & -5x = -40 & | :(-5) \\
 & x = 8 & S = \{8\}
 \end{array}$$

$$\begin{array}{lcl}
 \text{n)} & \frac{5x-1}{7} - \frac{9x-7}{5} + \frac{9x-5}{11} = 0 & | \cdot 385 \\
 & 55(5x-1) - 77(9x-7) + 35(9x-5) = 0 & | \text{ CL} \\
 & 275x - 55 - 693x + 539 + 315x - 175 = 0 & | \text{ CL} \\
 & -103x = 309 & | :(-103) \\
 & x = -\frac{309}{103} = -3 & S = \{-3\}
 \end{array}$$

$$\begin{array}{lcl}
 \text{o)} & x + \frac{x}{2} + \frac{x}{3} = 11 & | \cdot 6 \\
 & 6x + 3x + 2x = 66 & | \text{ CL} \\
 & 11x = 66 & | :11 \\
 & x = 6 & S = \{6\}
 \end{array}$$

$$\begin{array}{lcl}
 \text{p)} & \frac{x}{2} - 2 - \frac{x}{4} + \frac{x}{5} = 1 & | \cdot 20 \\
 & 10x - 40 - 5x + 4x = 20 & | \text{ CL} \\
 & 9x - 40 = 20 & | +40 \\
 & 9x = 60 & | :9 \\
 & x = \frac{60}{9} = \frac{20}{3} & S = \{\frac{20}{3}\}
 \end{array}$$

Exercice 30 (suite)

$$9) \quad \frac{3x-1}{2} + \frac{1-4x}{8} = x - \frac{3}{8} \quad | \cdot 8$$

$$4(3x-1) + (1-4x) = 8x - 3 \quad | CL$$

$$12x - 4 + 1 - 4x = 8x - 3 \quad | CL$$

$$8x - 3 = 8x - 3$$

$$S = \mathbb{R}$$