

Les Équations avec les Fractions
Mathématiques 9

Nom: Cte

Div: _____ Date: _____

Trouvez l'inconnu. Laissez vos réponses sous la forme d'un nombre entier ou d'une fraction irréductible.

<p>a) $\left(\frac{x}{4} + 5 = \frac{1}{3}\right) \times 12$</p> $\frac{12x}{4} + 60 = \frac{12}{3}$ $3x + 60 = 4$ $\begin{array}{r} 3x + 60 = 4 \\ -60 \quad -60 \\ \hline 3x = -56 \\ \frac{3x}{3} = \frac{-56}{3} \end{array}$ <p style="text-align: right;">$x = \frac{-56}{3}$</p>	<p>b) $\left(\frac{2}{7} - 3y = \frac{1}{4}\right) \times 28$</p> $\frac{56}{7} - 84y = \frac{28}{4}$ $8 - 84y = 7$ $\begin{array}{r} 8 - 84y = 7 \\ -8 \quad -8 \\ \hline -84y = -1 \end{array}$ <p style="text-align: right;">$y = \frac{1}{84}$</p>
<p>c) $\left(\frac{2x}{3} - 1 = \frac{5}{6}\right) \times 6$</p> $\frac{12x}{3} - 6 = \frac{30}{6}$ $4x - 6 = 5$ $\begin{array}{r} 4x - 6 = 5 \\ +6 \quad +6 \\ \hline 4x = 11 \\ \frac{4x}{4} = \frac{11}{4} \end{array}$ <p style="text-align: right;">$x = \frac{11}{4}$</p>	<p>d) $\left(\frac{b}{2} - 8 = 3b + \frac{2}{3}\right) \times 6$</p> $\frac{6b}{2} - 48 = 18b + \frac{12}{3}$ $3b - 48 = 18b + 4$ $\begin{array}{r} 3b - 48 = 18b + 4 \\ -36 \quad -36 \\ \hline -48 = 15b + 4 \\ -4 \quad -4 \\ \hline -48 = 15b + 4 \\ \frac{-48}{15} = \frac{15b}{15} + \frac{4}{15} \\ \frac{-52}{15} = \frac{15b}{15} \\ \frac{-52}{15} = b \end{array}$ <p style="text-align: right;">$b = \frac{-52}{15}$</p>
<p>e) $\left(\frac{8m}{3} - \frac{1}{9} = \frac{2m}{5} + 4\right) \times 45$</p> $\frac{360}{3} - \frac{45}{9} = \frac{90m}{5} + 180$ $120 - 5 = 18m + 180$ $\begin{array}{r} 120 - 5 = 18m + 180 \\ -18m \quad -18m \\ \hline 115 = 180 + 18m \\ -180 \quad -180 \\ \hline -65 = 18m \\ \frac{-65}{18} = m \end{array}$ <p style="text-align: right;">$m = \frac{-65}{18}$</p>	<p>f) $\left(4 - \frac{g}{3} = g + \frac{2}{7}\right) \times 21$</p> $84 - \frac{21g}{3} = 21g + \frac{42}{7}$ $84 - 7g = 21g + 6$ $\begin{array}{r} 84 - 7g = 21g + 6 \\ +7g \quad +7g \\ \hline 84 = 28g + 6 \\ -6 \quad -6 \\ \hline 84 = 28g + 6 \\ \frac{84}{28} = \frac{28g}{28} + \frac{6}{28} \\ \frac{3}{1} = \frac{28g}{28} + \frac{3}{7} \\ \frac{3}{1} = \frac{28g}{28} + \frac{12}{28} \\ \frac{3}{1} = \frac{28g + 12}{28} \\ \frac{3}{1} \times 28 = \frac{28g + 12}{28} \times 28 \\ 84 = 28g + 12 \\ -12 \quad -12 \\ \hline 72 = 28g \\ \frac{72}{28} = \frac{28g}{28} \\ \frac{18}{7} = g \end{array}$ <p style="text-align: right;">$g = \frac{18}{7}$</p>
<p>g) $\left(\frac{3e}{4} + 6 = \frac{e}{2} - 3\right) \times 4$</p> $\frac{12e}{4} + 24 = \frac{4e}{2} - 12$ $3e + 24 = 2e - 12$ $\begin{array}{r} 3e + 24 = 2e - 12 \\ -2e \quad -2e \\ \hline e + 24 = -12 \\ -24 \quad -24 \\ \hline e = -36 \end{array}$ <p style="text-align: right;">$e = -36$</p>	<p>h) $\left(\frac{2}{3} - 4w = 8w + 1\right) \times 3$</p> $\frac{6}{3} - 12w = 24w + 3$ $2 - 12w = 24w + 3$ $\begin{array}{r} 2 - 12w = 24w + 3 \\ +12w \quad +12w \\ \hline 2 = 36w + 3 \\ -3 \quad -3 \\ \hline -1 = 36w \\ \frac{-1}{36} = w \end{array}$ <p style="text-align: right;">$w = \frac{-1}{36}$</p>
<p>i) $\left(\frac{1}{2} + \frac{x}{3} = \frac{3x}{4} - \frac{1}{6}\right) \times 12$</p> $\frac{12}{2} + \frac{12x}{3} = \frac{36x}{4} - \frac{12}{6}$ $6 + 4x = 9x - 2$ $\begin{array}{r} 6 + 4x = 9x - 2 \\ -4x \quad -4x \\ \hline 6 = 5x - 2 \\ +2 \quad +2 \\ \hline 8 = 5x \\ \frac{8}{5} = \frac{5x}{5} \\ \frac{8}{5} = x \end{array}$ <p style="text-align: right;">$x = \frac{8}{5}$</p>	<p>j) $\left(\frac{2}{3}(2x-5) = 3x + \frac{1}{2}\right) \times 6$</p> $\frac{12}{3}(2x-5) = 18x + \frac{6}{2}$ $4(2x-5) = 18x + 3$ $8x - 20 = 18x + 3$ $\begin{array}{r} 8x - 20 = 18x + 3 \\ -8x \quad -8x \\ \hline -20 = 10x + 3 \\ -3 \quad -3 \\ \hline -23 = 10x \\ \frac{-23}{10} = \frac{10x}{10} \\ \frac{-23}{10} = x \end{array}$ <p style="text-align: right;">$x = \frac{-23}{10}$</p>