حل معادلات مع مقام عدد

10:12 Friday, 6 March 2026

1) $\frac{3x-7}{4}-(x-2)=\frac{x-10}{5} \quad /\cdot 20$

$20\cdot\frac{(3x-7)}{4}-20\cdot(x-2)=20\cdot\frac{(x-10)}{5}$

$15x-35-20x+40=4x-40$

$-5x+5=4x-40 \quad /+15x$

$5=9x-40 \quad /+40$

$\frac{45}{9}=\frac{9x}{9}$ $\boxed{x=5}$ ← حل المعادلة

2) $\frac{x-2}{3}+\frac{2x-1}{5}=\frac{4x+1}{15} \quad /\cdot 15$

$15\cdot\frac{(x-2)}{3}+15\cdot\frac{(2x-1)}{5}=15\cdot\frac{(4x+1)}{15}$

$5x-10+6x-3=4x+1$

$11x-13=4x+1 \quad /-4x$

$7x-13=1 \quad /+13$

$\frac{7x}{7}=\frac{14}{7}$ $\boxed{x=2}$ ← حل المعادلة

3) $\frac{3x-5}{4}-\frac{x-9}{12}=\frac{2x-7}{6} \quad /\cdot 12$

$12\cdot\frac{(3x-5)}{4}-12\cdot\frac{(x-9)}{12}=12\cdot\frac{(2x-7)}{6}$

$9x-15-x+9=4x-14$

$8x-6=4x-14 \quad /+6$

$8x=4x-8 \quad /-4x$

$\frac{4x}{4}=\frac{-8}{4}$ $\boxed{x=-2}$ ← حل المعادلة

4) $\frac{5x-4}{2}-\frac{3x+7}{4}=\frac{4x-3}{6} \quad /\cdot 12$

$12\cdot\frac{(5x-4)}{2}-12\cdot\frac{(3x+7)}{4}=12\cdot\frac{(4x-3)}{6}$

$30x-24-9x-21=8x-6$

$21x-45=8x-6 \quad /+45$

$21x=8x+39 \quad /-8x$

$\frac{13x}{13}=\frac{39}{13}$ $\boxed{x=3}$ ← حل المعادلة

5) $\frac{5x-4}{9}-\frac{3x+1}{12}=\frac{2x-3}{4}+1 \quad /\cdot 36$

$36\cdot\frac{(5x-4)}{9}-36\cdot\frac{(3x+1)}{12}=36\cdot\frac{(2x-3)}{4}+36\cdot 1$

$20x-16-9x-3=18x-27+36$

$11x-19=18x+9 \quad /-18x$

$-7x-19=9 \quad /+19$

$\frac{-7x}{-7}=\frac{28}{-7}$ $\boxed{x=-4}$ ← حل المعادلة

6) $\frac{5x-2}{9}-\frac{3x+1}{2}+\frac{4x+5}{3}+1=0 \quad /\cdot 18$

$18\cdot\frac{(5x-2)}{9}-18\cdot\frac{(3x+1)}{2}+18\cdot\frac{(4x+5)}{3}+18\cdot 1=18\cdot 0$

$10x-4-27x-9+24x+30+18=0$

$7x+13+48=0$

$7x+35=0 \quad /-35$

$\frac{7x}{7}=\frac{-35}{7}$ $\boxed{x=-5}$

7) $\frac{3x-1}{7}-\frac{5x-2}{4}=\frac{2x-5}{14}-x \quad /\cdot 28$

$28\cdot\frac{(3x-1)}{7}-28\cdot\frac{(5x-2)}{4}=28\cdot\frac{(2x-5)}{14}-28\cdot x$

$12x-4-35x+14=4x-10-28x$

$-23x+10=-24x-10 \quad /+24x$

$x+10=-10 \quad /-10$

$\boxed{x=-20}$ ← حل المعادلة

8) $3x-\frac{6-x}{2}-\frac{5x+6}{4}=1-\frac{2x+1}{5} \quad /\cdot 20$

$20\cdot 3x-20\cdot\frac{(6-x)}{2}-20\cdot\frac{(5x+6)}{4}=20\cdot 1-20\cdot\frac{(2x+1)}{5}$

$60x-60+10x-25x-30=20-8x-4$

$45x-90=16-8x \quad /-16$

$45x-106=-8x \quad /-45x$

$\frac{-106}{-53}=\frac{-53x}{-53}$ $\boxed{x=2}$

9) $\frac{5(1-x)}{4}+\frac{2(x-3)}{3}=1 \quad /\cdot 12$

$12\cdot\frac{(5-5x)}{4}+12\cdot\frac{(2x-6)}{3}=12\cdot 1$

$15-15x+8x-24=12$

$-9-7x=12 \quad /+9$

$\frac{-7x}{-7}=\frac{21}{-7}$ $\boxed{x=-3}$ ← حل المعادلة

10) $\frac{3(2x-1)}{2}-\frac{5(3x-2)}{6}=-\frac{1}{3} \quad /\cdot 6$

$6\cdot\frac{(6x-3)}{2}-6\cdot\frac{(15x-10)}{6}=6\cdot(-\frac{1}{3})$

$18x-9-15x+10=-2$

$3x+1=-2 \quad /-1$

$\frac{3x}{3}=\frac{-3}{3}$ $\boxed{x=-1}$ ← حل المعادلة

11) $\frac{3x-2}{5}-\frac{2x-5}{4}+\frac{6x-5}{10}=\frac{5x+1}{8} \quad /\cdot 40$

$40\cdot\frac{(3x-2)}{5}-40\cdot\frac{(2x-5)}{4}+40\cdot\frac{(6x-5)}{10}=40\cdot\frac{(5x+1)}{8}$

$24x-16-20x+50+24x-20=25x+5$

$28x+14=25x+5 \quad /-25x$

$3x+14=5 \quad /-14$

$\frac{3x}{3}=\frac{-9}{3}$ $\boxed{x=-3}$ ← حل المعادلة

12) $\frac{2x-3}{7}-\frac{3x-1}{5}=\frac{4-5x}{10}-\frac{7x+4}{14} \quad /\cdot 70$

$70\cdot\frac{(2x-3)}{7}-70\cdot\frac{(3x-1)}{5}=70\cdot\frac{(4-5x)}{10}-70\cdot\frac{(7x+4)}{14}$

$20x-30-42x+14=28-35x-35x-20$

$-22x-16=8-70x \quad /+70x$

$48x-16=8 \quad /+16$

$\frac{48x}{48}=\frac{24}{48}$ $\boxed{x=\frac{1}{2}}$ ← حل المعادلة

13) $\frac{3(2-x)}{10}-\frac{1-2x}{5}+1=\frac{1-3x}{2}-\frac{2-5x}{4} \quad /\cdot 20$

$20\cdot\frac{(6-3x)}{10}-20\cdot\frac{(1-2x)}{5}+20\cdot 1=20\cdot\frac{(1-3x)}{2}-20\cdot\frac{2-5x}{4}$

$12-6x-4+8x+20=10-30x-10+25x$

$28+2x=0-5x \quad /-2x$

$28=0-7x$

$\frac{28}{-7}=\frac{-7x}{-7}$ $\boxed{x=-4}$ ← حل المعادلة

14) $\frac{x}{2}-\frac{2x-7}{4}+\frac{3x-5}{3}=\frac{20-x}{6}-\frac{4x+3}{12} \quad /\cdot 12$

$12\cdot\frac{x}{2}-12\cdot\frac{(2x-7)}{4}+12\cdot\frac{(3x-5)}{3}=12\cdot\frac{(20-x)}{6}-12\cdot\frac{(4x+3)}{12}$

$6x-6x+21+12x-20=40-2x-4x-3$

$12x+0\cdot x+1=+37-6x \quad /+6x$

$18x+0\cdot x+1=37 \quad /-1$

$18x+0\cdot x=36$

$\frac{18x}{18}=\frac{36}{18}$ $\boxed{x=2}$ ← حل المعادلة

Made by Natalie