8.2 Solving Equations.

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LS RS

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

$\div 3 \quad \div 3$

$3x = -\frac{10}{9} \div \frac{3}{1}$

$-\frac{10}{9} \times \frac{1}{3}$

$x = -10/27$

$3x + \frac{2}{3} = -\frac{4}{9}$ ✓

$3\left(\frac{-10}{27}\right) + \frac{2}{3}$

$-\frac{30}{27} + \frac{18}{27}$

$-\frac{12}{27} \div 3 = -\frac{4}{9}$ ✓

NEW $\quad \frac{x}{3} - \frac{1}{2} = -1\frac{3}{4}$

create a coefficient

$\frac{x}{3} - \frac{1}{2} = -1\frac{3}{4}$ $\quad +4$, $\times 3$

$\frac{1}{3}x - \frac{1}{2} = -\frac{7}{4} + \frac{2}{4}$ $\quad \times 2$

$+\frac{1}{2}$

$\frac{1}{3}x = -\frac{5}{4}$

$\div \frac{1}{3}$

$-\frac{5}{4} \times \frac{3}{1} = \frac{-15}{4}$

$x = -3\frac{3}{4}$

Two ways to Solve

This shows $x \div 3$.

$\frac{x}{3} - \frac{1}{2} = -1\frac{3}{4}$

$+\frac{1}{2}$

$\frac{x}{3}(3) = -\frac{5}{4}(3)$

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

$x = -3\frac{3}{4}$

b) $\frac{w}{2} + \frac{3}{4} = 1\frac{3}{8}$ (×8)

$\frac{1}{2}w + \frac{3}{4} = \frac{11}{8}$

$-\frac{3}{4}$ $-\frac{3}{4}$ $\frac{6}{8}$

$\frac{1}{2}w = \frac{5}{8}$ ÷ $\frac{1}{2}$

÷ $\frac{1}{2}$

$w = \frac{5}{8} \times \frac{2}{1} \to \frac{10}{8} \to \frac{5}{4}$

$w = 1\frac{1}{4}$

c) $+\frac{4}{5} - 2\frac{1}{2}g = \frac{3}{10} - \frac{4}{5}$ (×2)

$-\frac{4}{5}$

$\frac{3}{10} - \frac{8}{10}$

$-2\frac{1}{2}g = \frac{-5}{10}$

$-\frac{5}{2}g = \frac{-1}{2} \div -\frac{5}{2}$

$\div -\frac{5}{2}$

$\frac{-1}{2} \times \frac{2}{-5} \to \frac{-1}{5}$

$g = \frac{1}{5}$

Assignment p 311 #7cd, 8cd, 9, 10, 18

try: 28, 29, 31