Solving Equations with Fractions.

Tuesday, November 12, 2019 10:06 AM

Review:

$2x + 5 = -3$

$-5 \quad -5$

$\frac{2x}{2} = \frac{-8}{2}$

$x = -4$

$5 \times \frac{x-3}{5} = 2 \times 5$

$x - 3 = 10$

$+3 \quad +3$

$x = 13$

$\frac{2}{3} \times 3 = \frac{6}{3} = 2$

$\frac{2}{3} \times 6^2 = 4$

$\frac{2}{3} \times \frac{3}{1} = 2$

$\frac{2}{3} \times 9^3 = 3$

$\frac{3}{4} \times 2 = \frac{6}{4} = \frac{3}{2}$

$\frac{3}{4} \times 4 = \frac{12}{4} = 3$

$\frac{3}{4} \times 8^2 = 6$

$\frac{3}{4} \times 12^3 = 9$

Proportions

$\frac{2}{3} = \frac{4}{6}$ $\quad \frac{3}{5} = \frac{6}{10}$ $\quad \frac{5}{6} = \frac{10}{12}$

↳ is a equation showing 2 equivalent fractions.

$\frac{3}{4} \overset{\times 4}{=} \frac{x}{16}$ $\quad x = 3 \times 4$

$x = 12$

$\frac{3}{4} = \frac{x}{18}$

$\frac{4x}{4} = \frac{3 \times 18}{4}$

$x = 13\frac{1}{2}$

Solve $\frac{x}{5} = \frac{7}{10}$ $\quad \frac{3}{4} = \frac{10}{x}$

Solve $\frac{2}{3} = \frac{x}{8}$

$\frac{3x}{3} = \frac{2 \times 8}{3}$

$x = \frac{16}{3}$

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

$\frac{3}{5} = \frac{10}{x}$

$\frac{3x}{3} = \frac{5 \times 10}{3}$

$x = \frac{50}{3}$

$x = 16\frac{2}{3}$

Solve: $\frac{3}{x} = \frac{10}{7}$

$\frac{10x}{10} = \frac{3 \times 7}{10}$

$x = \frac{21}{10}$

$x = 2\frac{1}{10}$

Eg $\frac{6}{1}\left(\frac{2}{3}\right) + \frac{6x}{1}\left(\frac{}{2}\right) = \frac{6}{1}\left(\frac{5}{6}\right)$

$\frac{12}{3} + \frac{6x}{2} = \frac{30}{6}$

$4 + 3x = 5$

$-4 \qquad -4$

$\frac{3x}{3} = \frac{1}{3}$

$x = \frac{1}{3}$

Lowest Common Denominator

LCD = 6

$\overset{2}{\cancel{6}}\left(\frac{2}{3}\right) + \overset{3}{\cancel{6}}\left(\frac{x}{2}\right) = \overset{1}{\cancel{6}}\left(\frac{5}{\cancel{6}}\right)$

$4 + 3x = 5$

$-4 \qquad -4$

$\frac{3x}{3} = \frac{1}{3}$

$x = \frac{1}{3}$

Solve $\frac{\overset{3}{\cancel{12}}}{1}\left(\frac{3x}{\cancel{4}}\right) + \frac{\overset{4}{12}}{1}\left(\frac{2}{3}\right) = \frac{\overset{2}{12}}{1}\left(\frac{1}{6}\right)$ LCD = 12

$\frac{36x}{4} + \frac{24}{3} = \frac{12}{6}$

$\rightarrow 9x + 8 = 2$

$-8 \qquad -8$

$$\frac{9x}{9} = \frac{-6}{9}$$

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

Try: Solve $10\left(\frac{2x}{5}\right) + 10\left(\frac{1}{2}\right) = 10\left(\frac{7}{10}\right)$

$$\frac{20x}{5} + \frac{10}{2} = \frac{70}{10}$$

$$4x + 5 = 7$$

$$-5 \quad -5$$

$$\frac{4x}{4} = \frac{2}{4}$$

$$x = \frac{1}{2}$$

Solve $12\left(\frac{x}{1}\right) - {}^{4}\!\!\not{12}\left(\frac{7}{\not 3}\right) = {}^{3}\!\!\not{12}\left(\frac{3}{\not 4}\right)$ LCD = 12.

$$12x - 28 = 9$$

$$+28 \quad +28$$

$$\frac{12x}{12} = \frac{37}{12}$$

$$x = 3\frac{1}{12}$$

Handout #4