Solving Equations with Fractions on Both Sides

Re-write each set of fractions with common denominators

We Do:

$\frac{1}{2}\quad\frac{2}{3}\quad\frac{1}{6}$	$\frac{3x}{8}\quad\frac{3}{4}\quad\frac{y+1}{6}$

You Do:

$\frac{4}{9}\quad\frac{1}{3}\quad\frac{5}{6}$	$\frac{x}{10}\quad\frac{1}{4}\quad\frac{3y}{5}$

$$\frac{2}{9}x+5=17-\frac{4}{9}x$$

Check

$$\frac{5}{6}(12x-4)=\frac{10}{3}$$

Check

$$\frac{2}{3}x+\frac{1}{2}x=\frac{5}{6}x+20$$

Check

Solving Equations with Fractions on Both Sides

Re-write each set of fractions with common denominators

We Do:

$\frac{1}{2}\quad\frac{2}{3}\quad\frac{1}{6}$	$\frac{3}{3}\cdot\frac{3x}{8}\quad\frac{6}{6}\cdot\frac{3}{4}\quad\frac{(y+1)}{6}\cdot\frac{4}{4}$
$\frac{3}{6}\quad\frac{4}{6}\quad\frac{1}{6}$	$\frac{9x}{24}\quad\frac{18}{24}\quad\frac{4y+4}{24}$

You Do:

$\frac{4}{9}\quad\frac{1}{3}\quad\frac{5}{6}$	$\frac{2}{2}\quad\frac{x}{10}\quad\frac{5}{5}\quad\frac{1}{4}\quad\frac{3y}{5}\cdot\frac{4}{4}$
$\frac{8}{18}\quad\frac{6}{18}\quad\frac{15}{18}$	$\frac{2x}{20}\quad\frac{5}{20}\quad\frac{12y}{20}$

$$\frac{2}{9}x+5=17-\frac{4}{9}x$$

$+\frac{4}{9}x \qquad +\frac{4}{9}x$

$\frac{6}{9}x+5=17$

$-5 \qquad -5$

$\frac{9}{6}\cdot\frac{6}{9}x=\frac{12}{1}\cdot\frac{9}{1}$

$x=18$

Check

F: $\frac{2}{9}(x)+5=17-\frac{4}{9}(x)$

$\frac{2}{9}(18)+5=17-\frac{4}{9}(18)$

$4+5=17-8$

$9=9$ ✓

$$\frac{5}{6}(12x-4)=\frac{10}{3}$$

$10x - \frac{20}{6} = \frac{10}{3} + \frac{20}{6}$

$+\frac{20}{6} \qquad \frac{20}{6} + \frac{20}{6}$

$\frac{1}{10} \cdot 10x = \frac{40}{6} \cdot \frac{1}{10}$

$\boxed{x = \frac{40}{60} = \frac{2}{3}}$

Check

F: $\frac{5}{6}(12x-4)=\frac{10}{3}$

S: $\frac{5}{6}(12\cdot\frac{2}{3}-4)=\frac{10}{3}$

S: $\frac{5}{6}(8-4)=\frac{10}{3}$

$\frac{5}{6}\cdot\frac{4}{1}=\frac{10}{3}$

$\frac{20}{6}=\frac{10}{3}$

$\frac{10}{3}=\frac{10}{3}$ ✓

$$\frac{2}{3}x+\frac{1}{2}x=\frac{5}{6}x+20$$

$\frac{4}{6}x + \frac{3}{6}x = \frac{5}{6}x + 20$

$\frac{7}{6}x = \frac{5}{6}x + 20$

$-\frac{5}{6}x \qquad -\frac{5}{6}x$

$\frac{6}{2}\cdot\frac{2}{6}x = {}^{10}\!20\cdot\frac{6}{2_1}$

$x = 60$

Check

F: $\frac{2}{3}x+\frac{1}{2}x=\frac{5}{6}x+20$

S: $\frac{2}{3}(60)+\frac{1}{2}(60)=\frac{5}{6}(60)+20$

S: $40 + 30 = 50 + 20$

$70 = 70$ ✓