Solving Equations

Here is how to solve addition, subtraction, multiplication, and division equations with fractions.

Addition	Subtraction
Solve $n + \frac{3}{5} = 9$. $$n + \frac{3}{5} = 9$$ $$n + \frac{3}{5} - \frac{3}{5} = 9 - \frac{3}{5}$$ $$n = 8\frac{2}{5}$$	Solve $x - 2\frac{1}{3} = 6\frac{1}{9}$. $$x - 2\frac{1}{3} = 6\frac{1}{9}$$ $$x - 2\frac{1}{3} + 2\frac{1}{3} = 6\frac{1}{9} + 2\frac{1}{3}$$ $$x = 6\frac{1}{9} + 2\frac{3}{9}$$ $$x = 8\frac{4}{9}$$
Multiplication	**Division**
Solve $\frac{5}{8}y = 1\frac{2}{3}$. $$\frac{5}{8}y = 1\frac{2}{3}$$ $$\left(\frac{8}{5}\right)\frac{5}{8}y = \frac{5}{3}\left(\frac{8}{5}\right)$$ $$y = \frac{\overset{1}{\cancel{5}}}{3} \times \frac{8}{\underset{1}{\cancel{5}}}$$ $$y = \frac{8}{3} = 2\frac{2}{3}$$	Solve $a \div \frac{1}{4} = 3\frac{1}{2}$. $$a \div \frac{1}{4} = 3\frac{1}{2}$$ $$a \times \frac{4}{1} = 3\frac{1}{2}$$ $$a \times \frac{4}{1}\left(\frac{1}{4}\right) = \frac{7}{2}\left(\frac{1}{4}\right)$$ $$a = \frac{7}{8}$$

Solve each equation and check your answer.

1. $z + 2\frac{1}{3} = 3\frac{1}{6}$ _____

2. $6n = \frac{3}{4}$ _____

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

4. $y \div \frac{1}{2} = 2\frac{1}{8}$ _____

5. $\frac{3}{8} + n = 10$ _____

6. $2\frac{2}{9} \div 5 = x$ _____

7. Algebra The rainfall total for this month is $4\frac{9}{10}$ in. Yesterday it rained $2\frac{1}{10}$ in. Use the equation $n + 2\frac{1}{10} = 4\frac{9}{10}$ to calculate how much rainfall was received before yesterday.

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