

3.12 Solving Equations containing Fractions

p. 204 12-18-17

$$x - \frac{3}{7} = \frac{5}{7}$$

$$+ \frac{3}{7} \quad + \frac{3}{7}$$

$$\hline x = \frac{8}{7}$$

$$x = 1\frac{1}{7}$$

$$x - \frac{3}{8} = \frac{7}{8}$$

$$+ \frac{3}{8} \quad + \frac{3}{8}$$

$$\hline x = \frac{10}{8}$$

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

Dec 11-8:41 AM

Dec 11-8:39 AM

$$\frac{5}{12} + t = \frac{3}{8} = \frac{9}{24}$$

$$- \frac{5}{12} \quad - \frac{5}{12} = \frac{10}{24}$$

$$\hline - \frac{1}{24} \quad t = -\frac{1}{24}$$

$$\frac{4}{9} + r = \frac{-1}{2} = \frac{-9}{18}$$

$$- \frac{4}{9} \quad - \frac{4}{9} = \frac{8}{18}$$

$$\hline r = -\frac{17}{18}$$

Dec 11-8:41 AM

Dec 11-8:41 AM

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

$$\begin{array}{r} -\frac{3}{8} \qquad -\frac{3}{8} \\ \hline y = -\frac{1}{8} \end{array}$$

Dec 11-8:44 AM

$$\frac{3}{14} + t = -\frac{2}{7}$$

Jan 25-9:09 AM

$$\frac{3}{8}x = \frac{1}{4} \div \frac{3}{8}$$

$$x = \frac{1}{4} \cdot \frac{8}{3}$$

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

Caution!
To undo multiplying by $\frac{3}{8}$, you can divide by $\frac{3}{8}$
or multiply by its reciprocal $\frac{8}{3}$.

Dec 11-8:47 AM

$$4x = \frac{8}{9} \div \frac{4}{1}$$

$$x = \frac{8}{9} \cdot \frac{1}{4}$$

$$x = \frac{2}{9}$$

Dec 11-8:48 AM

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

$\div \frac{4}{4}$

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

$$\frac{1}{2} \cdot \frac{4}{3}$$

$$3x = \frac{6}{7} \div \frac{3}{1}$$

$\div 3$

$$x = \frac{2}{7}$$

$\frac{2}{7} \cdot \frac{1}{3} = \frac{2}{21}$

Jan 25-9:10 AM

The amount of copper in zinc is $\frac{1}{4}$ of the total weight. If a sample contains $5\frac{1}{3}$ ounces of copper, what is the total weight of the sample?

Let w represent the total weight of the sample.

$$\frac{1}{4}w = 5\frac{1}{3}$$

Write an equation.

$$\frac{1}{4}w \cdot \frac{4}{1} = 5\frac{1}{3} \cdot \frac{4}{1}$$

Multiply by the reciprocal of $\frac{1}{4}$.

$$w = \frac{16}{3} \cdot \frac{4}{1}$$

Write $5\frac{1}{3}$ as an improper fraction.

$$w = \frac{64}{3} \text{ or } 21\frac{1}{3}$$

Then simplify.

The sample weighs $21\frac{1}{3}$ ounces.

Jan 25-9:11 AM

The amount of copper in brass is $\frac{3}{4}$ of the total weight. If a sample contains $4\frac{1}{5}$ ounces of copper, what is the total weight of the sample?

Jan 25-9:10 AM

Solve. Write each answer in simplest form.

- $x - \frac{3}{8} = \frac{5}{8}$ 1 $\frac{3}{4}x = \frac{11}{3} \div \frac{3}{4}$
- $y + \frac{7}{16} = \frac{19}{32}$ $\frac{5}{32}$ $\div \frac{3}{4}$ $\frac{4}{3} \cdot \frac{4}{3}$
- $\frac{x}{4} = \frac{3}{7}$ $\frac{12}{7}$ or $1\frac{5}{7}$
- $\frac{3}{4}x = 1\frac{1}{3}$ $\frac{16}{9}$ or $1\frac{7}{9}$ $\frac{16}{9} = 1\frac{7}{9}$ $\frac{4}{3} \cdot \frac{4}{3}$
- Over the course of a week, Marissa ate some apples from a basket on the table. She left 20 apples in the basket. This was five-eighths the number of apples her mother had picked earlier in the week. How many apples did her mother pick? 32

$$4 \cdot \frac{x}{4} = \frac{3}{7} \cdot \frac{4}{1}$$

$$\frac{12}{7} = 1\frac{5}{7}$$

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

$$\frac{1}{4}x = \frac{3}{7} \div \frac{1}{4}$$

$\div \frac{1}{4}$ $\frac{3}{7} \cdot \frac{4}{1}$

Jan 25-9:11 AM