

6. In tennis, the Grand Slam tournaments are the four most prestigious annual events. At one point in his career, Roger Federer had won three more Grand Slam singles titles than Rafael Nadal. If at that time Roger Federer held the record for the most Grand Slam singles titles won with 17, how many Grand Slam singles titles had Rafael Nadal won?

7. The Empire State Building and the Chrysler Building are two of the tallest buildings in New York City. The Empire State Building is 204 feet taller than the Chrysler Building. If the Empire State Building is 1250 feet tall, write and solve an equation to find the height of the Chrysler Building.

$$\begin{array}{r} 204 + x = 1250 \\ -204 \quad -204 \\ \hline x = 1046 \end{array}$$

x : Chrysler Building

Solve:

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

$$\begin{array}{l} 3 \cdot \\ 3 \cdot \end{array} \frac{3}{4} + x = \frac{5 \cdot 4}{3 \cdot 4}$$

$$\begin{array}{r} \frac{9}{12} + x = \frac{20}{12} \\ -\frac{9}{12} \quad -\frac{9}{12} \\ \hline \end{array}$$

$$x = \frac{11}{12}$$

$$1\frac{2}{3} \rightarrow \frac{3}{3} + \frac{2}{3} = \frac{5}{3}$$

$$12 \cdot \left(\frac{3}{4} + x = \frac{5}{3} \right)$$

$$\begin{array}{r} 12 \cdot \frac{3}{4} + 12 \cdot x = 12 \cdot \frac{5}{3} \\ \frac{36}{4} \quad \quad \quad \frac{60}{3} \end{array}$$

$$\begin{array}{r} 9 + 12x = 20 \\ -9 \quad -9 \\ \hline \end{array}$$

$$\frac{12x}{12} = \frac{11}{12}$$

$$x = \frac{11}{12}$$

Do first lesson check here

Solving Equations with Multiplication or Division Examples

8. $6t = 78$

$$\frac{6}{6} \frac{6}{6} t = \frac{78}{6}$$

$$t = 13$$

9. $42 = -14y$

$$\frac{42}{-14} = \frac{-14y}{-14}$$

$$-3 = y$$

10. $\frac{8}{3}x = \frac{9}{4}$

$$\frac{3}{8} \cdot \frac{8}{3} x = \frac{9}{4} \cdot \frac{3}{8}$$

$$x = \frac{9}{4} \cdot \frac{3}{8} = \frac{27}{32}$$

$$\frac{72}{12} = 6$$

11. $24 = \frac{4}{3}y$

$$\frac{3}{4} \cdot 24 = \frac{4}{3}y \cdot \frac{3}{4}$$

$$\frac{72}{4} = y$$

$$18 = y$$

$$y = 18$$

Alternate

$$3 \cdot 24 = \frac{4}{3}y \cdot 3$$

$$\frac{72}{4} = \frac{4y}{4}$$

$$18 = y$$

12. $\frac{m}{3} = 5$