

Wednesday, September 12, 2012

TISK Problems

1) Multiply: $\frac{12}{5} \left(\frac{25}{6}\right)$

2) Add: $\frac{5}{9} + \left(-\frac{3}{7}\right)$

3) Find the common difference and tell which difference it is:

3, 1, 3, 33, 163, 513, 1251,

We will have 3 Mental Math Questions today.

Homework: Complete the Percents Worksheet

Homework Check

$$1. \quad x = \frac{30}{100} \cdot 150$$

$$2. \quad 50 = \frac{90}{100} \cdot x$$

$$3. \quad 27 = \frac{x}{100} \cdot 120$$

$$4. \quad x = \frac{23\frac{1}{2}}{100} \cdot 54$$

$$5. \quad 82 = \frac{205}{100} \cdot x$$

$$6. \quad 63 = \frac{x}{100} \cdot 72$$

$$7. \quad x = \frac{110}{100} \cdot 12$$

$$8. \quad 98 = \frac{89}{100} \cdot x$$

$$9. \quad 47 = \frac{x}{100} \cdot 900$$

$$10. \quad 14 = \frac{12\frac{2}{3}}{100} \cdot x$$

11. What is 40% of 240?

$$x = \frac{40}{100} \cdot 240$$

12. What is 95% of 300?

$$x = \frac{95}{100} \cdot 300$$

13. One hundred fifteen is what percent of 750?

$$115 = \frac{x}{100} \cdot 750$$

14. Fifteen is 35% of what number?

$$15 = \frac{35}{100} \cdot x$$

Example 1. Solve a percent equation.

- To solve a percent equation, set up two ratios.
- To do this, divide by the number being multiplied.
- Then, you can solve using one of two methods:

Using Equivalent Ratios...

$$x = \frac{3}{100} \cdot 500$$
$$\frac{x}{500} = \frac{3}{100}$$
$$x = 3 \cdot 5 = 15$$

Using Cross-Multiplication...

$$\frac{30}{100} \cdot x = 50$$
$$\frac{30}{100} = \frac{50}{x}$$
$$30x = 5000$$
$$x = \frac{5000}{30} = \frac{500}{3} = 166 \frac{2}{3}$$

Example 2. Solve a percent equation.

$$15 = \frac{x}{100} \cdot 12$$

$$\frac{15}{12} = \frac{x}{100}$$

$$\frac{5}{4} = \frac{x}{100}$$

$$500 = 4x$$

$$\frac{500}{4} = \frac{4x}{4}$$

$$125 = x$$

Remember to check your original problem.

In this case, x was the missing percent.

Therefore, our final answer is 125%.

Example 3. Solve a percent equation.

$$x = \frac{21}{100} \cdot 300$$

$$\frac{x}{300} = \frac{21}{100}$$

$$x = 21 \cdot 3 = 63$$

$$\frac{5}{100} \cdot x = 27$$

$$\frac{1}{20} \cdot x = 27$$

$$\frac{1}{20} = \frac{27}{x}$$

$$x = 27 \cdot 20 = 540$$

Example 4. Solve a percent equation.

$$35 = \frac{x}{100} \cdot 600$$

$$\frac{35}{600} = \frac{x}{100}$$

$$\frac{7}{120} = \frac{x}{100}$$

$$\frac{700}{120} = \frac{120x}{120}$$

$$\frac{70}{12} = x$$

$$5 \frac{10}{12} = x$$

$$5 \frac{5}{6} = x$$

$$\frac{35}{600} = \frac{x}{100}$$

Diagram illustrating the simplification of the fraction $\frac{35}{600}$ to $\frac{x}{100}$. A green arrow labeled $\div 6$ points from the numerator 35 to the numerator x . Another green arrow labeled $\div 6$ points from the denominator 600 to the denominator 100.

$$\begin{array}{r} 5 \\ 6 \overline{)35} \\ \underline{-30} \\ 5 \end{array}$$

Our final answer is $5 \frac{5}{6}\%$.