Solving Percent Problems

Solving percent problems: Models and calculations

Name _____ **Date** _____ **Score** _____ / 8

QUICK REVIEW

Percent means per 100: $35\% = 35/100 = 0.35$. To find a part, multiply the whole by the percent as a fraction. For example, 20% of 30 is $30 \times 20/100 = 6$. To find the percent use $100\times$part/whole; to find the whole divide the part by the percent fraction.

Worked example

What percent of 48 is 12?

1. The part of the whole is $\frac{12}{48} = \frac{1}{4}$.

2. The percent number is $\frac{1}{4} \times 100 = 25$. Thus the percentage is 25%.

Answer: 25%.

Practice Problems

Show your thinking.

1. Find 30% of 60.

2. 14 is what percent of 56?

3. 21 is 30% of what number?

4. A 180-seat hall is 25% full. How many seats are filled?

5. Write the percent represented by 9 out of 72.

6. Use a percent equation to find 40% of 80.

7. Find one quarter of 28 by using 25%.

8. Find the percent for a part of 26 and a whole of 130.

Answer Key

1. 18.
2. 25%.
3. 70.
4. 45.
5. $\frac{25}{2}\%$.
6. 32.
7. 7.
8. 20%.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. $30\% = 30/100 = \frac{3}{10}$.
2. The part is $60 \times \frac{3}{10} = 18$. Check: $18/60 = \frac{3}{10} = 30\%$.

Problem 2

1. The part of the whole is $\frac{14}{56} = \frac{1}{4}$.
2. The percent number is $\frac{1}{4} \times 100 = 25$. Thus the percentage is 25%.

Problem 3

1. 21 is 30% of the whole, so $21 = (\frac{3}{10})w$.
2. $w = 21 \div \frac{3}{10} = 70$; $70 \times \frac{3}{10} = 21$ checks.

Problem 4

1. $25\% = 25/100 = \frac{1}{4}$.
2. The part is $180 \times \frac{1}{4} = 45$. Check: $45/180 = \frac{1}{4} = 25\%$.

Problem 5

1. The part of the whole is $\frac{9}{72} = \frac{1}{8}$.
2. The percent number is $\frac{1}{8} \times 100 = \frac{25}{2}$. Thus the percentage is $\frac{25}{2}\%$.

Problem 6

1. $40\% = 40/100 = \frac{2}{5}$.
2. The part is $80 \times \frac{2}{5} = 32$. Check: $32/80 = \frac{2}{5} = 40\%$.

Problem 7

1. $25\% = 25/100 = \frac{1}{4}$.
2. The part is $28 \times \frac{1}{4} = 7$. Check: $7/28 = \frac{1}{4} = 25\%$.

Problem 8

1. The part of the whole is $\frac{26}{130} = \frac{1}{5}$.
2. The percent number is $\frac{1}{5} \times 100 = 20$. Thus the percentage is 20%.

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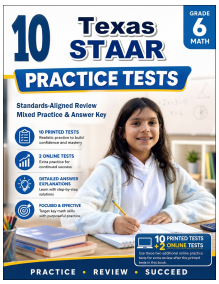

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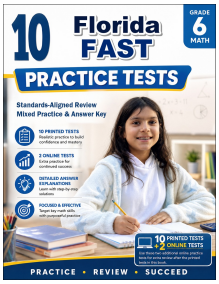

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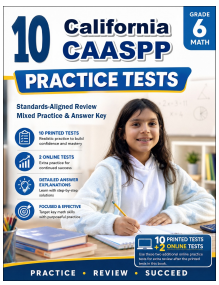

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