Solving Rate and Ratio Word Problems

Rate and ratio word problems: Models and calculations

Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

Choose a ratio or a rate model from the units. For red:blue $= 2:3$ and 20 tiles, there are 5 parts, $20/5 = 4$ per part, so 8 red and 12 blue. For 12 km in 3 h, use $12/3 = 4$ km/h.

Worked example

Mix juice and water in ratio $3:5$ for 24 cups. Find each amount.

1. $3 + 5 = 8$ parts; $24 \div 8 = 3$ cups per part.
2. Juice $= 3 \times 3 = 9$ cups; water $= 5 \times 3 = 15$ cups.
Answer: 9 cups juice; 15 cups water.

Practice Problems

Show your thinking.

1. Two pencils cost 3 dollars. Find the cost of 10 pencils.

2. Red:blue tiles is $4:5$ and the total is 36. Find red tiles.

3. A bus goes 84 km in 7 h. Find its speed.

4. 3 bags hold 24 apples. How many bags hold 56 apples?

5. A model uses 2 short rods for every 7 long rods. How many long rods for 8 short rods?

6. A drink uses 5 cups water and 2 cups syrup. Find the syrup fraction of the whole drink.

Answer Key

1. 15 dollars.
2. 16.
3. 12 kilometers per hour.
4. 7 bags.
5. 28.
6. $\frac{2}{7}$.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. $10 \div 2 = 5$ packs.
2. $5 \times 3 = 15$ dollars.

Problem 2

1. $4 + 5 = 9$ parts; $36/9 = 4$ tiles per part.
2. $4 \times 4 = 16$ red; blue $= 5 \times 4 = 20$ and $16 + 20 = 36$.

Problem 3

1. The rate compares 84 kilometers with 7 hour.
2. Divide: $84 \div 7 = 12$ kilometers per hour.
3. Check: $12 \times 7 = 84$ kilometers.

Problem 4

1. $24/3 = 8$ apples per bag.
2. $56/8 = 7$ bags; $7 \times 8 = 56$.

Problem 5

1. $8/2 = 4$ sets.
2. $4 \times 7 = 28$ long rods.

Problem 6

1. Total $= 5 + 2 = 7$ cups.
2. Syrup fraction $= 2/7$; water and syrup fractions total $5/7 + 2/7 = 1$.

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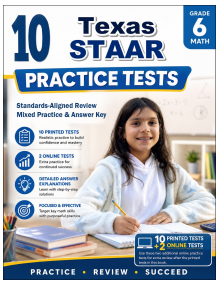

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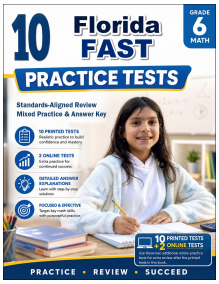

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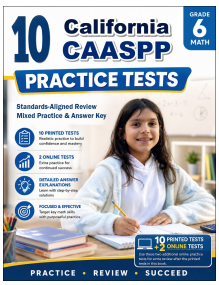

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