

Ratios & Rates

Answer key

6.RP.A.1

6.RP.A.2

6.RP.A.3

13 problems

1. A fruit basket holds 8 apples and 12 oranges. Write the ratio of apples to oranges in simplest form.

Answer 2 : 3

Divide both terms by the GCF, 4: $8 : 12 = 2 : 3$.

2. Write the ratio 15 to 25 in simplest form, then as a fraction.

Answer 3 : 5, or $\frac{3}{5}$

$\gcd(15, 25) = 5$, so $15 : 25 = 3 : 5 = \frac{3}{5}$.

3. A car travels 150 miles in 3 hours. What is its speed as a unit rate?

Answer 50 miles per hour

Unit rate = $\frac{150 \text{ mi}}{3 \text{ h}} = 50$ miles per hour.

4. A store sells 6 bottles of water for \$4.50. What is the price per bottle?

Answer \$0.75 per bottle

$\frac{\$4.50}{6} = \0.75 per bottle.

5. Which is the better buy: 12 markers for \$9.00, or 20 markers for \$14.00? Justify with unit prices.

Answer 20 for \$14.00 (it's \$0.70 each vs. \$0.75 each)

$\$9.00 \div 12 = \0.75 each. $\$14.00 \div 20 = \0.70 each. The 20-pack is cheaper per marker.

6. Complete the table of equivalent ratios for 2 cups of juice to 5 cups of water.

Juice	2	4	?
Water	5	?	15

Answer Juice: 6; Water: 10

Each column keeps the ratio 2 : 5. 4 juice pairs with 10 water; 15 water pairs with 6 juice.

7. What is 30% of 80?

Answer 24

$30\% = \frac{30}{100}$, so $\frac{30}{100} \times 80 = 24$.

8. In a class, the ratio of boys to girls is 5 : 3. If there are 40 students in all, how many are boys?

Answer 25 boys

Total parts = $5 + 3 = 8$. One part = $40 \div 8 = 5$ students. Boys = $5 \times 5 = 25$.

9. A printer prints 24 pages in 40 seconds. At that rate, how many pages does it print in 60 seconds?

Answer 36 pages

Rate = $\frac{24}{40} = 0.6$ pages per second. In 60 s: $0.6 \times 60 = 36$ pages.

10. A recipe that serves 4 people uses 2 cups of rice. How many cups are needed to serve 10 people?

Answer 5 cups

Per person: $\frac{2}{4} = 0.5$ cup. For 10 people: $0.5 \times 10 = 5$ cups.

11. A backpack is on sale for 25% off its original price of \$48. How much do you save?

Answer \$12

25% of \$48 = $\frac{1}{4} \times 48 = \12 saved.

12. Paint is mixed using 3 parts blue to 2 parts yellow. Which ratio below is equivalent?

Answer B) 9 : 6

3 : 2 scaled by 3 gives 9 : 6. The others do not simplify to 3 : 2.

13. A cyclist rides 18 kilometers in 45 minutes. Express her speed in kilometers per hour.

Answer 24 km/h

45 min = $\frac{3}{4}$ h. Speed = $\frac{18}{3/4} = 18 \times \frac{4}{3} = 24$ km/h.