

Ratio Power Moves

Use equivalent ratios to find unknown amounts.

GRADE 6 • 6.RP.A.3

CCSS.Math.Content.6.RP.A.3 "Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations."

NAME _____

DATE _____

KEEP RATIOS EQUAL

Equivalent ratios show the same relationship, even when both amounts are multiplied or divided. Find a unit rate, or multiply both parts of a ratio by the same factor.

WORKED EXAMPLE

6 refill packs hold 30 pencils. At the same rate, how many pencils do 8 packs hold?

1. Find pencils per pack: $30 / 6 = 5$.
2. Multiply by 8 packs: $5 \times 8 = 40$.

Answer: 40 pencils

PRACTICE 6 problems

- 1** The ratio of red tiles to blue tiles is 3 to 12. If there are 9 red tiles, how many blue tiles are there?

ANSWER _____

- 2** A bike travels 14 miles in 2 hours at a constant speed. How far does it travel in 10 hours?

ANSWER _____

- 3** Solve the proportion: $x / 16 = 15 / 4$.

ANSWER _____

- 4** A printer uses 24 mL of ink to print 18 posters. At the same rate, how much ink is needed to print 27 posters?

ANSWER _____

- 5** A music app downloads 45 songs in 3 minutes. At the same rate, how many songs can it download in 12 minutes?

ANSWER _____

- 6** A theater charges \$26 for 13 student tickets. At the same rate, what is the cost of 17 student tickets?

ANSWER _____

APPLY IT Show your work

- 1** At a gaming tournament, a player earns 48 points in 4 rounds. If the player earns points at the same rate, how many points will the player earn in 15 rounds?

WORK SPACE

ANSWER _____

- 2** A video editor renders 10 short clips in 25 minutes. At the same rate, how long will it take to render 18 short clips?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Two online sticker shops use constant unit prices. Shop A charges \$18 for 12 stickers. Shop B charges \$28 for 20 stickers. Which shop has the lower price per sticker? Explain by finding each unit price and telling how much less per sticker it costs.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	The ratio of red tiles to blue tiles is 3 to 12. If there are 9 red tiles, how many blue tiles are there?	36 blue tiles
2	A bike travels 14 miles in 2 hours at a constant speed. How far does it travel in 10 hours?	70 miles
3	Solve the proportion: $x / 16 = 15 / 4$.	$x = 60$
4	A printer uses 24 mL of ink to print 18 posters. At the same rate, how much ink is needed to print 27 posters?	36 mL
5	A music app downloads 45 songs in 3 minutes. At the same rate, how many songs can it download in 12 minutes?	180 songs
6	A theater charges \$26 for 13 student tickets. At the same rate, what is the cost of 17 student tickets?	\$34

PART 2 • APPLY IT

- 180 points** Find the unit rate: $48 / 4 = 12$ points per round. Then multiply: $12 \times 15 = 180$.
- 45 minutes** Find the time per clip: $25 / 10 = 2.5$ minutes per clip. Then multiply: $2.5 \times 18 = 45$.

CHALLENGE

Shop B. Shop A costs \$1.50 per sticker, and Shop B costs \$1.40 per sticker, so Shop B costs \$0.10 less per sticker.

Accept correct answers supported by an equivalent-ratio table, unit-rate calculation, or proportion equation. For the challenge, accept \$1.5 as equivalent to \$1.50.