

Rate Match Mission

Use equal ratios to solve proportion problems.

GRADE 7 • MA.7.AR.3.2

MA.7.AR.3.2 "Apply previous understanding of ratios to solve real-world problems involving proportions."

NAME _____

DATE _____

BUILD EQUAL RATIOS

A proportion shows that two ratios are equal. Find a unit rate by dividing, then multiply by the new amount. You can also write two equal fractions and solve for x .

WORKED EXAMPLE

5 notebooks cost \$15. How much do 8 notebooks cost at the same rate?

1. Find the cost per notebook: $15 / 5 = 3$ dollars.
2. Multiply for 8 notebooks: $8 \times 3 = 24$ dollars.

Answer: \$24

PRACTICE 6 problems

- 1** Solve the proportion: $4/7 = x/21$

ANSWER _____

- 2** Solve the proportion: $9/27 = x/18$

ANSWER _____

- 3** 11 bracelets cost \$22. How much do 14 bracelets cost at the same rate?

ANSWER _____

- 4** On a map, 1 centimeter represents 30 kilometers. How many kilometers does 7 centimeters represent?

ANSWER _____

- 5** 16 arcade tokens cost \$64. How much do 10 tokens cost at the same rate?

ANSWER _____

- 6** A printer makes 13 flyers in 26 seconds. At the same rate, how many seconds will it take to make 39 flyers?

ANSWER _____

APPLY IT Show your work

- 1** At a school gaming tournament, 36 players form 4 equal teams. If 63 players sign up for the next tournament, how many equal teams of the same size can be formed?

WORK SPACE

ANSWER _____

- 2** A video editor uses 18 minutes of footage to make 6 highlight clips. At the same rate, how many minutes of footage are needed to make 14 highlight clips?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A school store sells 7 sticker sheets for \$14. Maya has \$31. How many sticker sheets can she buy, and how much money will she have left? Explain how you know she cannot buy one more sheet.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Solve the proportion: $4/7 = x/21$	x = 12
2	Solve the proportion: $9/27 = x/18$	x = 6
3	11 bracelets cost \$22. How much do 14 bracelets cost at the same rate?	\$28
4	On a map, 1 centimeter represents 30 kilometers. How many kilometers does 7 centimeters represent?	210 kilometers
5	16 arcade tokens cost \$64. How much do 10 tokens cost at the same rate?	\$40
6	A printer makes 13 flyers in 26 seconds. At the same rate, how many seconds will it take to make 39 flyers?	78 seconds

PART 2 • APPLY IT

- 7 teams** Each team has $36 / 4 = 9$ players. Then $63 / 9 = 7$ teams.
- 42 minutes** Each clip uses $18 / 6 = 3$ minutes of footage. Then $14 \times 3 = 42$ minutes.

CHALLENGE

Maya can buy 15 sticker sheets and have \$1 left. Each sheet costs \$2, so 16 sheets would cost \$32, which is more than \$31.

Accept correct unit-rate methods or equivalent proportion setups. For the challenge, accept 15 sticker sheets and \$1 left only when the reasoning shows that 16 sheets cost \$32.