

Ratio Route

Solve proportions with a strategy that makes sense to you.

GRADE 6 • 6.NR.4.3

6.NR.4.3 "Solve problems involving proportions using a variety of student-selected strategies."

NAME _____

DATE _____

THE BIG IDEA

A ratio compares two quantities. A proportion says that two ratios are equivalent. You can solve a proportion by scaling both parts, making equivalent fractions, or cross multiplying, then check that both ratios have the same value.

WORKED EXAMPLE

Solve $\frac{3}{5} = \frac{12}{x}$.

1. $3x = 5 \times 12$

2. $3x = 60$

3. $x = 20$

Answer: $x = 20$

PRACTICE 6 problems

1 Solve $\frac{2}{7} = \frac{x}{21}$.

ANSWER _____

2 Solve $\frac{x}{8} = \frac{14}{56}$.

ANSWER _____

3 Solve $\frac{4}{9} = \frac{28}{x}$.

ANSWER _____

4 Solve $\frac{18}{24} = \frac{x}{32}$.

ANSWER _____

5 Solve $\frac{6}{11} = \frac{x}{33}$.

ANSWER _____

6 Solve $\frac{14}{49} = \frac{x}{56}$.

ANSWER _____

APPLY IT Show your work

- 1** A game store sells 8 trading-card sleeves for \$6. At the same rate, how much will 28 sleeves cost?

WORK SPACE

ANSWER _____

- 2** A coding club's robot completes 8 test loops in 2 minutes. At the same rate, how long will it take to complete 26 test loops?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

The art club uses 16 blue beads for every 24 yellow beads. For a design with 38 blue beads, how many yellow beads are needed? Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Solve $2/7 = x/21$.	x = 6
2	Solve $x/8 = 14/56$.	x = 2
3	Solve $4/9 = 28/x$.	x = 63
4	Solve $18/24 = x/32$.	x = 24
5	Solve $6/11 = x/33$.	x = 18
6	Solve $14/49 = x/56$.	x = 16

PART 2 • APPLY IT

1. **\$21** Set up $8/6 = 28/x$. Cross multiply to get $8x = 168$, so $x = 21$.
2. **6 1/2 minutes** Set up $8/2 = 26/x$. Cross multiply to get $8x = 52$, so $x = 13/2$, or 6 1/2 minutes.

CHALLENGE

57 yellow beads. One valid calculation is $24 \times 38 / 16 = 57$.

Accept any correct strategy, including scaling, equivalent fractions, or cross multiplication. For the robot problem, accept 6 1/2 minutes or 13/2 minutes, and require the challenge explanation to show proportional reasoning.