

Rate Rescue

Plan, solve, and check with unit rates.

GRADE 8 • 8.MP

8.MP "Display perseverance and patience in problem-solving. Demonstrate skills and strategies needed to succeed in mathematics, including critical thinking, reasoning, and effective collaboration and expression. Seek help and apply feedback..."

NAME _____

DATE _____

USE A UNIT RATE

When a rate stays the same, find the amount for 1 unit first. Then multiply, and check whether your answer makes sense for a larger or smaller amount.

WORKED EXAMPLE

The art club buys 11 markers for \$55. At the same price, what do 13 markers cost?

1. Find one-marker cost: $55 / 11 = 5$.
2. Multiply: $13 \times 5 = 65$.
3. Check: 13 is more than 11, so the cost should be more than \$55.

Answer: \$65

PRACTICE 5 problems

- 1** A school store sells 3 sticker packs for \$18. At the same rate, what do 8 packs cost? Plan, solve, and check.

ANSWER _____

- 2** A runner completes 28 laps in 4 minutes. At the same rate, how many laps in 9 minutes? Plan, solve, and check.

ANSWER _____

- 3** A phone plan provides 7 GB for \$21. At the same rate, what is the cost of 12 GB? Plan, solve, and check.

ANSWER _____

- 4** A concert club prints 9 shirts for \$54. At the same rate, what do 3 shirts cost? Plan, solve, and check.

ANSWER _____

- 5** A snack bar fills 10 jars for \$80. At the same rate, what do 14 jars cost? Plan, solve, and check.

ANSWER _____

APPLY IT Show your work

- 1** A music app downloads 14 songs in 35 minutes. At the same speed, how many songs can it download in 90 minutes? Show a plan and a check.

WORK SPACE

ANSWER _____

- 2** A student uploads 16 photos in 24 seconds. At the same speed, how many seconds will 50 photos take? Show a plan and a check.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A skate park pass costs \$32 for 8 visits. Sam has \$93. At the same price per visit, what is the greatest number of visits Sam can buy, and how much money is left? Explain why Sam cannot buy one more visit.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A school store sells 3 sticker packs for \$18. At the same rate, what do 8 packs cost? Plan, solve, and check.	\$48
2	A runner completes 28 laps in 4 minutes. At the same rate, how many laps in 9 minutes? Plan, solve, and check.	63 laps
3	A phone plan provides 7 GB for \$21. At the same rate, what is the cost of 12 GB? Plan, solve, and check.	\$36
4	A concert club prints 9 shirts for \$54. At the same rate, what do 3 shirts cost? Plan, solve, and check.	\$18
5	A snack bar fills 10 jars for \$80. At the same rate, what do 14 jars cost? Plan, solve, and check.	\$112

PART 2 • APPLY IT

- 36 songs** Find the unit rate: $14 / 35 = 2/5$ song per minute. Multiply $90 \times 2/5 = 36$; a longer time should give more songs.
- 75 seconds** Find seconds per photo: $24 / 16 = 3/2$ seconds. Multiply $50 \times 3/2 = 75$; more photos should take more time.

CHALLENGE

23 visits, \$1 left. One visit costs \$4, and 24 visits would cost \$96, which is more than \$93.

Accept equivalent unit-rate methods and reasonable written checks. For the challenge, accept any clear explanation that 24 visits cost more than Sam has.