

Plan, Solve, Check

Use a plan, then test your answer.

GRADE 8 • 8.MP.1

8.MP.1 "Make sense of problems and persevere in solving them."

NAME _____

DATE _____

A PROBLEM-SOLVING PLAN

Read for what you know and what you need to find. Write an equation or use a model, solve it, then check whether your answer fits the situation.

WORKED EXAMPLE

A snack stand starts with \$13 and earns \$7 for each bundle sold. It needs \$55. How many bundles must it sell?

1. Let x = bundles sold.
2. $13 + 7x = 55$
3. $7x = 42$, so $x = 6$.
4. Check: $13 + 7(6) = 55$.

Answer: 6 bundles

PRACTICE 5 problems

- 1** Write an equation, solve, and check. A bike rental costs \$4 plus \$9 per hour. Maya paid \$31. How many hours did she rent the bike?

ANSWER _____

- 2** Write an equation, solve, and check. Each downloaded episode uses 2 GB of storage. A tablet has 16 GB free. How many episodes can fit?

ANSWER _____

- 3** Write an equation, solve, and check. A game costs \$48 and is 25% off. What is the sale price?

ANSWER _____

- 4** Write an equation, solve, and check. The art club needs $\frac{3}{4}$ liter of paint for each banner. How much paint is needed for 5 banners?

ANSWER _____

- 5** Write an equation, solve, and check. On a map, 2 cm represents 10 km. Two towns are 3.5 cm apart on the map. What is the actual distance?

ANSWER _____

APPLY IT Show your work

- 1** Show a plan, solve, and check. Rina has \$17 saved. She earns \$9 each week tutoring, spends \$8 on an app, and wants \$54 for headphones. How many weeks must she tutor?

WORK SPACE

ANSWER _____

- 2** Show a plan, solve, and check. A controller costs \$75. A store takes 20% off, then adds \$4 shipping. What is the final cost?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Explain your reasoning. A school concert sells 28 tickets. Student tickets cost \$3, and adult tickets cost \$5. The total collected is \$100. How many student and adult tickets were sold?

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Write an equation, solve, and check. A bike rental costs \$4 plus \$9 per hour. Maya paid \$31. How many hours did she rent the bike?	3 hours, because $4 + 9(3) = 31$.
2	Write an equation, solve, and check. Each downloaded episode uses 2 GB of storage. A tablet has 16 GB free. How many episodes can fit?	8 episodes, because $2(8) = 16$.
3	Write an equation, solve, and check. A game costs \$48 and is 25% off. What is the sale price?	\$36, because 25% of 48 is 12, and $48 - 12 = 36$.
4	Write an equation, solve, and check. The art club needs $\frac{3}{4}$ liter of paint for each banner. How much paint is needed for 5 banners?	$3\frac{3}{4}$ liters, because $5(\frac{3}{4}) = \frac{15}{4} = 3\frac{3}{4}$.
5	Write an equation, solve, and check. On a map, 2 cm represents 10 km. Two towns are 3.5 cm apart on the map. What is the actual distance?	17.5 km, because $(3.5/2)(10) = 17.5$.

PART 2 • APPLY IT

- 5 weeks** Use $17 + 9x - 8 = 54$. Then $9x = 45$, so $x = 5$, and $17 + 9(5) - 8 = 54$.
- \$64** Find 20% of 75, which is 15. Then subtract 15 and add 4: $75 - 15 + 4 = 64$.

CHALLENGE

20 student tickets and 8 adult tickets. $20 + 8 = 28$, and $3(20) + 5(8) = 100$.

Accept equivalent equations and equivalent fraction or decimal forms. Students should show a reasonable plan and a check that matches the situation.