

Equation Reality Check

Turn everyday situations into equations.

GRADE 8 • 8.MP.4

8.MP.4 "Model with mathematics."

NAME _____

DATE _____

BUILD A MODEL

Choose x for the unknown amount. Write an equation that matches the situation, solve it, and check by putting your answer back into the equation.

WORKED EXAMPLE

A game store charges \$18 for a controller rental plus \$3 per game rented. The bill is \$30. How many games were rented?

1. Let x = games rented.
2. Write $18 + 3x = 30$.
3. Subtract 18: $3x = 12$.
4. Divide by 3: $x = 4$.

Answer: 4 games. Check: $18 + 3(4) = 30$.

PRACTICE 5 problems

- 1** Your phone has 6 GB used. Each video uses 2 GB. When 20 GB is used, how many videos are saved? Model, solve, and check.

ANSWER _____

- 2** The art club has \$11 and earns \$9 per car wash. It needs \$56. How many car washes are needed? Model, solve, and check.

ANSWER _____

- 3** A bike rental costs \$10 plus \$7 per hour. The total cost is \$45. How many hours was the bike rented? Model, solve, and check.

ANSWER _____

- 4** A playlist has 13 songs. You add 5 songs each week. When will it have 43 songs? Model, solve, and check.

ANSWER _____

- 5** A school store has 70 stickers. It puts 8 stickers in each prize bag and keeps 6 stickers. How many prize bags can it fill? Model, solve, and check.

ANSWER _____

APPLY IT Show your work

- 1** A dance ticket order has a \$25 processing fee plus \$7 per ticket. The total is \$95. How many tickets were ordered? Write an equation, solve it, and check.

WORK SPACE

ANSWER _____

- 2** A gaming headset costs \$86. Jada has \$14 and saves \$9 each week. How many weeks will she need to save? Write an equation, solve it, and check.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A custom phone-case site offers two club-order plans. Plan A costs \$8 plus \$8 per case. Plan B costs \$44 plus \$2 per case. Write equations. For how many cases do the plans cost the same? Which plan costs less for 11 cases?

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Your phone has 6 GB used. Each video uses 2 GB. When 20 GB is used, how many videos are saved? Model, solve, and check.	$6 + 2x = 20$; $x = 7$ videos.
2	The art club has \$11 and earns \$9 per car wash. It needs \$56. How many car washes are needed? Model, solve, and check.	$11 + 9x = 56$; $x = 5$ car washes.
3	A bike rental costs \$10 plus \$7 per hour. The total cost is \$45. How many hours was the bike rented? Model, solve, and check.	$10 + 7x = 45$; $x = 5$ hours.
4	A playlist has 13 songs. You add 5 songs each week. When will it have 43 songs? Model, solve, and check.	$13 + 5x = 43$; $x = 6$ weeks.
5	A school store has 70 stickers. It puts 8 stickers in each prize bag and keeps 6 stickers. How many prize bags can it fill? Model, solve, and check.	$8x + 6 = 70$; $x = 8$ prize bags.

PART 2 • APPLY IT

- 10 tickets** Use $25 + 7x = 95$. Then $x = 10$, and $25 + 7(10) = 95$.
- 8 weeks** Use $14 + 9x = 86$. Then $x = 8$, and $14 + 9(8) = 86$.

CHALLENGE

$8 + 8x = 44 + 2x$, so $x = 6$ cases and both cost \$56. For 11 cases, Plan A costs \$96 and Plan B costs \$66, so Plan B costs less.

Accept equivalent equations and correct unit labels. Students should check by substituting their answer into the model.