LESSON MAKER PRO

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

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?

WORK SPACE AND ANSWER

ANSWER KEY

Equation Reality Check

GRADE 8 · 8.MP.4

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

1. **10 tickets** Use 25 + 7x = 95. Then x = 10, and 25 + 7(10) = 95.
2. **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.