LESSON MAKER PRO

What Changes What?

Find how one quantity affects another.

GRADE 6 · 6.AF.C

6.AF.C "Identify and analyze relationships between independent and dependent variables."

NAME _____ DATE _____

THE BIG IDEA

The independent variable is the amount you choose or change. The dependent variable changes because of it. Use the relationship to find a missing value.

WORKED EXAMPLE

Game tickets cost $19 each. Find the missing cost and name both variables.

GAME TICKETS

Tickets	Cost ($)
8	152
11	?

1. The number of tickets is independent; the cost depends on it.
2. Cost = 19 × tickets.
3. 19 × 11 = 209.

Answer: $209; independent: number of tickets; dependent: cost

PRACTICE 4 problems

1 Songs cost $3 each. Find the cost of 4 songs. Name both variables.

ANSWER _____

2 A plant is 7 cm tall and grows 2 cm each week. Find its height after 5 weeks. Name both variables.

ANSWER _____

3 A game score follows y = 50x + 10, where x is the number of levels finished. Find y when x = 3. Name both variables.

ANSWER _____

4 A tank holds 40 L and loses 4 L each minute. Find the water left after 6 minutes. Name both variables.

ANSWER _____

APPLY IT Show your work

1 A karaoke booth charges the same price each hour. Use the table to find the cost for 5 hours. Name both variables.

KARAOKE BOOTH

Hours	Cost ($)
2	18
4	36

ANSWER _____

2 Your team starts with 90 points and earns 15 points per workout. Find the total after 4 workouts. Name both variables.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Plan A costs $6 plus $4 per movie. Plan B costs $14 plus $2 per movie. How many movies make the costs equal? What is that cost? Name the independent and dependent variables.

WORK SPACE AND ANSWER

ANSWER KEY

What Changes What?

GRADE 6 · 6.AF.C

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Songs cost $3 each. Find the cost of 4 songs. Name both variables.	**$12; independent: number of songs; dependent: cost**
2	A plant is 7 cm tall and grows 2 cm each week. Find its height after 5 weeks. Name both variables.	**17 cm; independent: weeks; dependent: height**
3	A game score follows y = 50x + 10, where x is the number of levels finished. Find y when x = 3. Name both variables.	**160; independent: levels finished (x); dependent: score (y)**
4	A tank holds 40 L and loses 4 L each minute. Find the water left after 6 minutes. Name both variables.	**16 L; independent: minutes; dependent: water left**

PART 2 · APPLY IT

1. **$45; independent: hours; dependent: cost** The booth costs $9 per hour because 18 / 2 = 9. Multiply 5 × 9 to get $45.
2. **150 points; independent: workouts; dependent: total points** Calculate 90 + 15 × 4 = 150.

CHALLENGE

4 movies; $22 for either plan; independent: number of movies; dependent: total cost

Accept equivalent names for variables, such as time for weeks or minutes when the unit is clear. For the challenge, 6 + 4 × 4 = 14 + 2 × 4 = 22.