LESSON MAKER PRO

Rules in Motion

Turn tables and graphs into rules.

GRADE 6 · 6.A.1

6.A.1 "Recognize and represent relationships between varying quantities; translate from one representation to another; use patterns, tables, graphs, and rules to model and solve mathematical problems..."

NAME _____ DATE _____

FIND THE RULE

When x increases by equal amounts, look for how much y increases. Use that change to write a rule, then test the rule with another pair.

WORKED EXAMPLE

Write a rule for the table.

x	y
13	45
15	51
17	57

1. When x rises by 2, y rises by 6.
2. So y rises by 3 for each increase of 1 in x.
3. At x = 13, 3 × 13 = 39. Add 6 to get 45.

Answer: y = 3x + 6

PRACTICE 4 problems

1 The pairs (1, 9), (2, 13), and (4, 21) follow a rule. Write y in terms of x.

ANSWER _____

2 For y = 2x + 7, find y when x = 6.

ANSWER _____

3 For y = 5x + 4, find y when x = 2 and when x = 8.

ANSWER _____

4 Does (7, 34) fit y = 4x + 6? Show why.

ANSWER _____

APPLY IT Show your work

1 An arcade charges an entry fee plus the same price for each game. Use the table to write the total cost y for x games.

ARCADE COSTS

Games (x)	Cost ($)
2	17
4	27
6	37

ANSWER _____

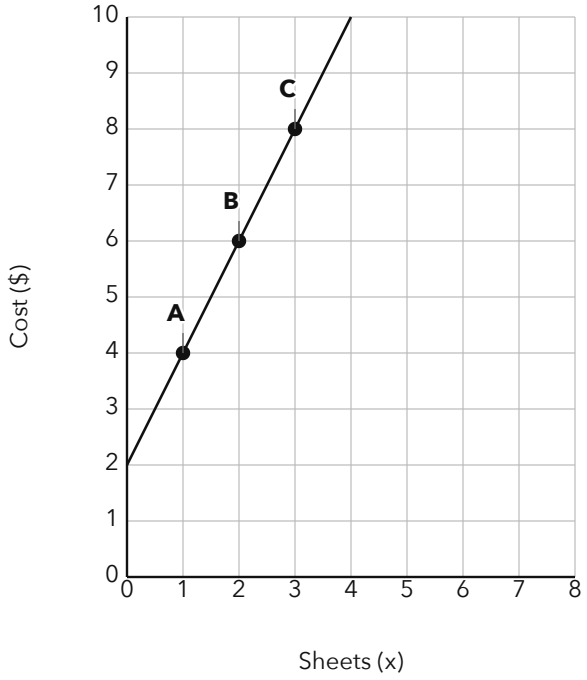
2 A club pays $9 for supplies and $4 for each bracelet it makes. Write the total cost y for x bracelets. Find the cost of 6 bracelets.

WORK SPACE

ANSWER _____

CHALLENGE One step up

The graph shows the total cost y for x sticker sheets. Write the rule and find the cost of 7 sheets. Explain how you found the rule.



WORK SPACE AND ANSWER

ANSWER KEY

Rules in Motion

GRADE 6 · 6.A.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	The pairs (1, 9), (2, 13), and (4, 21) follow a rule. Write y in terms of x.	**y = 4x + 5**
2	For y = 2x + 7, find y when x = 6.	**19**
3	For y = 5x + 4, find y when x = 2 and when x = 8.	**14 when x = 2; 44 when x = 8**
4	Does (7, 34) fit y = 4x + 6? Show why.	**Yes. 4 × 7 + 6 = 34.**

PART 2 · APPLY IT

1. **y = 5x + 7** Two more games cost $10, so each game costs $5. At 2 games, $10 of the $17 is for games, leaving a $7 entry fee.
2. **y = 4x + 9; $33** Add the $9 supply cost to $4 per bracelet. For 6 bracelets, 4 × 6 + 9 = 33.

CHALLENGE

y = 2x + 2; 7 sheets cost $16. The cost rises by $2 for each additional sheet, and the line crosses the cost axis at $2.

Accept equivalent rules and clear explanations of the rate and starting cost. In the challenge, the student may use any two marked points to find the $2 increase per sheet.