LESSON MAKER PRO

Changing Together

Find the rule behind a table or graph.

GRADE 6 · MT.6.EE.8

MT.6.EE.8 "Use variables to represent two quantities that change in relationship to one another, analyze the relationship between the dependent and independent variables using graphs and tables..."

NAME _____ DATE _____

THE BIG IDEA

The independent variable is the amount you choose or change. The dependent variable changes with it. Use a table or graph to find a rule that connects them.

WORKED EXAMPLE

Buttons cost $9 each. Use the table to write total cost c in terms of the number of buttons b.

BUTTON COSTS

Buttons, b	Cost, c
0	$0
2	$18
4	$36

1. From 2 buttons to 4 buttons, cost rises by $18.
2. That is $18 / 2 = $9 per button.
3. At 0 buttons, cost is $0.

Answer: c = 9b

PRACTICE 4 problems

1 Tickets cost $6 each. Let t be tickets sold and m be money earned. Write m in terms of t.

ANSWER _____

2 For y = 4x, find y when x = 5.

ANSWER _____

3 The pairs (x, y) are (2, 10), (4, 20), and (6, 30). Write y in terms of x.

ANSWER _____

4 For p = 3n + 2, which variable is independent? Find p when n = 6.

ANSWER _____

APPLY IT Show your work

1 At a youth gathering at a Montana tribal community center, volunteers set the same number of chairs at each table. Use the table to write chairs c in terms of tables t. How many chairs are needed for 7 tables?

GATHERING SETUP

Tables, t	Chairs, c
1	4
3	12
5	20

ANSWER _____

2 A skate club orders sticker packs. Use the table to write total cost c in terms of packs p. What is the cost of 5 packs?

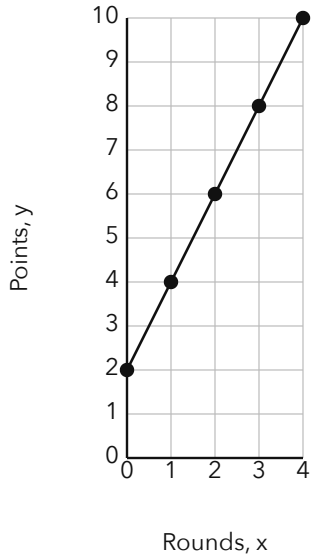
STICKER ORDER

Packs, p	Cost, c
0	$3
3	$9
6	$15

ANSWER _____

CHALLENGE One step up

The graph shows total points y after x rounds of a game. A player says y = 2x. Explain why that rule is wrong, then write the correct rule.



WORK SPACE AND ANSWER

ANSWER KEY

Changing Together

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Tickets cost $6 each. Let t be tickets sold and m be money earned. Write m in terms of t.	**m = 6t**
2	For y = 4x, find y when x = 5.	**y = 20**
3	The pairs (x, y) are (2, 10), (4, 20), and (6, 30). Write y in terms of x.	**y = 5x**
4	For p = 3n + 2, which variable is independent? Find p when n = 6.	**n is independent; p = 20.**

PART 2 · APPLY IT

1. **c = 4t; 28 chairs** The table shows 4 chairs per table. Substitute t = 7 to get c = 28.
2. **c = 2p + 3; $13** Cost rises $6 for 3 packs, or $2 per pack, and starts at $3. For 5 packs, c = 2(5) + 3 = 13.

CHALLENGE

The graph shows 2 points at 0 rounds, but y = 2x gives 0 points then. The correct rule is y = 2x + 2.

Accept equivalent equations and explanations. In the challenge, the explanation must account for the 2 points at 0 rounds.