LESSON MAKER PRO

Patterns in Play

Connect tables, graphs, and equations.

GRADE 6 · 6.AF.C.21.a

6.AF.C.21.a "Use tables, graphs, and equations to represent the relationship between independent and dependent variables."

NAME _____ DATE _____

THE BIG IDEA

The independent variable is the amount you choose. The dependent variable changes with it. A table pairs their values, an equation gives a rule, and a graph plots each pair as (independent, dependent).

WORKED EXAMPLE

The table shows laps completed, x, and minutes spent, y. Write an equation for the relationship.

TIME FOR LAPS

Laps (x)	Minutes (y)
3	15
6	30
9	45

1. 15 / 3 = 5 minutes per lap.
2. 30 / 6 = 5 minutes per lap, so the rate stays the same.
3. Multiply laps by 5: y = 5x.

Answer: y = 5x

PRACTICE 4 problems

1 A game awards 7 points per win. Let x be wins and y be points. Write an equation.

ANSWER _____

2 For y = 11x, find y when x = 4.

ANSWER _____

3 Tickets cost $12 each. Let x be tickets and y be total cost. Give the pair (x, y) when x = 2.

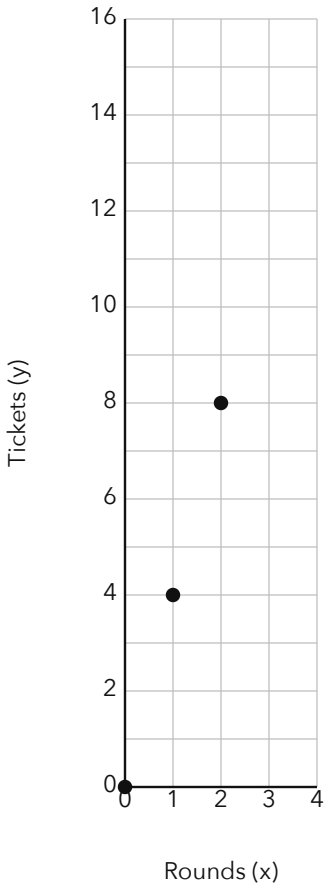
ANSWER _____

4 For y = 10x, list the pairs (x, y) when x = 1 and x = 2.

ANSWER _____

APPLY IT Show your work

1 The graph shows tickets won in arcade rounds. Write an equation for tickets y after x rounds. Predict the tickets won after 4 rounds.



ANSWER _____

2 A gaming club tracks its followers as it posts videos. Use the table to write an equation and predict its followers after 7 videos.

CLUB FOLLOWERS

Videos (x)	Followers (y)
0	10
1	12
2	14
4	18

ANSWER _____

CHALLENGE One step up

A club starts with 18 members and gains 4 each week. Let x be weeks and y be members. Write an equation. When will the club have 50 members? Explain.

WORK SPACE AND ANSWER

ANSWER KEY

Patterns in Play

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A game awards 7 points per win. Let x be wins and y be points. Write an equation.	**y = 7x**
2	For y = 11x, find y when x = 4.	**44**
3	Tickets cost $12 each. Let x be tickets and y be total cost. Give the pair (x, y) when x = 2.	**(2, 24)**
4	For y = 10x, list the pairs (x, y) when x = 1 and x = 2.	**(1, 10) and (2, 20)**

PART 2 · APPLY IT

1. **y = 4x; 16 tickets** The plotted pairs show 4 tickets per round. Use y = 4x, then substitute x = 4 to get y = 16.
2. **y = 2x + 10; 24 followers** The club starts with 10 followers and gains 2 per video. Substitute x = 7 into y = 2x + 10 to get 24.

CHALLENGE

y = 4x + 18. After 8 weeks, the club will have 50 members because 4 × 8 + 18 = 50.

Accept equivalent equations and correctly labeled values. For the challenge, accept solving 50 = 4x + 18 as the explanation.