LESSON MAKER PRO

Patterns in Motion

Connect tables, graphs, and equations.

GRADE 6 · 6.AT.D.11.b

6.AT.D.11.b "Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation (e.g., in a problem involving motion at constant speed..."

NAME _____ DATE _____

FIND THE RATE

A table lists input and output pairs. A graph plots those pairs. When the output starts at 0 and grows by the same amount for each input, write output = rate × input.

WORKED EXAMPLE

Use the table to write an equation for pages p read after d days. How many pages are read after 5 days?

READING

Days (d)	Pages (p)
1	9
2	18
3	27

1. 18 / 2 = 9 pages per day.
2. Write p = 9d.
3. At 5 days, p = 9 × 5 = 45.

Answer: p = 9d; 45 pages

PRACTICE 4 problems

1 Pairs (0, 0), (2, 10), and (4, 20) show x and y. Write an equation for y.

ANSWER _____

2 The equation c = 6b gives the cost c of b buttons. Which variable depends on the other?

ANSWER _____

3 For y = 8x, give the ordered pair (x, y) when x = 3.

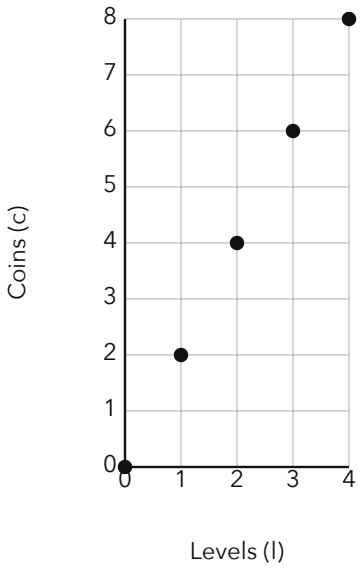
ANSWER _____

4 Pairs (t, d) are (1, 4) and (3, 12). Write an equation for d.

ANSWER _____

APPLY IT Show your work

1 In a game, you earn the same number of coins per level. Use the graph to write an equation for coins c after l levels. How many coins after 5 levels?



ANSWER _____

2 A playlist gets the same number of new songs each week. Use the table to write an equation for songs s after w weeks. How many songs after 6 weeks?

PLAYLIST GROWTH

Weeks (w)	Songs (s)
0	0
2	8
4	16

ANSWER _____

CHALLENGE One step up

A video starts with 5 views. Its views v grow evenly over days d. The pairs (d, v) are (0, 5), (2, 11), and (4, 17). Write an equation and explain what 5 means.

WORK SPACE AND ANSWER

ANSWER KEY

Patterns in Motion

GRADE 6 · 6.AT.D.11.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Pairs (0, 0), (2, 10), and (4, 20) show x and y. Write an equation for y.	**y = 5x**
2	The equation c = 6b gives the cost c of b buttons. Which variable depends on the other?	**c depends on b.**
3	For y = 8x, give the ordered pair (x, y) when x = 3.	**(3, 24)**
4	Pairs (t, d) are (1, 4) and (3, 12). Write an equation for d.	**d = 4t**

PART 2 · APPLY IT

1. **c = 2l; 10 coins** The graph shows 2 coins per level. Substitute l = 5 into c = 2l.
2. **s = 4w; 24 songs** The playlist gains 8 / 2 = 4 songs per week. Substitute w = 6 into s = 4w.

CHALLENGE

v = 3d + 5. The 5 means the video had 5 views at day 0.

Accept equivalent wording for the dependent variable and the starting value. Equations should use the variables named in each problem.