LESSON MAKER PRO

Table Rule Detectives

Find the equation behind each input-output pattern.

GRADE 6 · TEKS 6.6.B

6.6.B "write an equation that represents the relationship between independent and dependent quantities from a table; and"

NAME _____ DATE _____

FIND THE RULE

If the output changes at a constant rate, write the relationship as y=mx+b. Find m by dividing the change in y by the change in x, then use one pair to find b.

WORKED EXAMPLE

Use the table to write an equation for y in terms of x.

INPUT AND OUTPUT

x	y
8	29
12	41
16	53

1. As x increases by 4, y increases by 12.
2. 12 / 4 = 3, so y=3x+b.
3. Use (8,29): 29=3(8)+b, so b=5.

Answer: y=3x+5

PRACTICE 5 problems

1 An input-output table has the pairs (0,7), (2,11), and (4,15). Write an equation for y in terms of x.

ANSWER _____

2 An input-output table has the pairs (0,10), (4,18), and (7,24). Write an equation for y in terms of x.

ANSWER _____

3 An input-output table has the pairs (1,6), (4,18), and (7,30). Write an equation for y in terms of x.

ANSWER _____

4 An input-output table has the pairs (0,14), (6,26), and (10,34). Write an equation for y in terms of x.

ANSWER _____

5 An input-output table has the pairs (2,13), (6,21), and (9,27). Write an equation for y in terms of x.

ANSWER _____

APPLY IT Show your work

1 A music app tracks x downloaded songs and y total cost in cents. Its data pairs are (0,7), (2,15), and (6,31). Write an equation for y in terms of x.

WORK SPACE

ANSWER _____

2 At an arcade, x is the number of game rounds and y is the total number of tokens used. A group records (0,2), (2,14), and (4,26). Write an equation for y in terms of x.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A table pairs x and y as (2,15), (6,31), and (9,43). Write an equation for y in terms of x. Then find y when x=13.

WORK SPACE AND ANSWER

ANSWER KEY

Table Rule Detectives

GRADE 6 · TEKS 6.6.B

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	An input-output table has the pairs (0,7), (2,11), and (4,15). Write an equation for y in terms of x.	**y=2x+7**
2	An input-output table has the pairs (0,10), (4,18), and (7,24). Write an equation for y in terms of x.	**y=2x+10**
3	An input-output table has the pairs (1,6), (4,18), and (7,30). Write an equation for y in terms of x.	**y=4x+2**
4	An input-output table has the pairs (0,14), (6,26), and (10,34). Write an equation for y in terms of x.	**y=2x+14**
5	An input-output table has the pairs (2,13), (6,21), and (9,27). Write an equation for y in terms of x.	**y=2x+9**

PART 2 · APPLY IT

1. **y=4x+7** The cost rises 8 cents when the song count rises 2, so the rate is 4 cents per song. The starting cost is 7 cents.
2. **y=6x+2** The token total rises 12 when the rounds rise 2, so the rate is 6 tokens per round. The starting amount is 2 tokens.

CHALLENGE

y=4x+7; when x=13, y=59

Accept equivalent equations, such as y-7=2x for y=2x+7. Students should identify the constant rate and starting value correctly.