

Function Table Lab

Match each input to its linear output.

GRADE 8 • 8.PFA.3.d

8.PFA.3.d "Create a table of values for a linear function given a graph, equation in the form of $y = mx + b$, or context."

NAME _____

DATE _____

BUILD THE TABLE

For $y = mx + b$, use each x -value one at a time. Multiply x by m , add b , and place the matching x and y values in the same row.

WORKED EXAMPLE

Create a table of values for $y = 8x + 9$ when $x = 3$ and $x = 5$.

1. For $x = 3$, substitute: $y = 8(3) + 9$.
2. For $x = 3$, simplify: $y = 24 + 9 = 33$.
3. For $x = 5$, substitute: $y = 8(5) + 9$.
4. For $x = 5$, simplify: $y = 40 + 9 = 49$.

Answer: $x \mid y$ 3 | 33 5 | 49

PRACTICE 6 problems

- 1** Create a table of values for $y = 2x + 6$ when $x = -6, -2$, and 4 .

ANSWER _____

- 2** Create a table of values for $y = -6x + 2$ when $x = -2, 1$, and 4 .

ANSWER _____

- 3** Create a table of values for $y = \frac{1}{2}x - 6$ when $x = -10, 0$, and 10 .

ANSWER _____

- 4** A graph of a line includes the points $(0, -14)$ and $(2, -6)$. Create a table of values for the line when $x = -2, 0$, and 6 .

ANSWER _____

- 5** Create a table of values for $y = x - 12$ when $x = 1, 2$, and 6 .

ANSWER _____

- 6** Create a table of values for $y = -4x - 2$ when $x = -1, 2$, and 6 .

ANSWER _____

APPLY IT Show your work

- 1** An online art shop charges a \$4 account fee plus \$2 for each digital sticker pack. Let x be the number of packs and y be the total cost in dollars. Create a table for 1, 6, and 11 packs.

WORK SPACE

ANSWER _____

- 2** A recreation center charges a \$2 sign-up fee plus \$4 for each game session. Let x be the number of game sessions and y be the total cost in dollars. Create a table for 2, 4, and 6 game sessions.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A line has a y -intercept of -2 and passes through $(2, 2)$. Create a table of values when $x = -6, -2, 2$, and 6 . Then explain how you found the y -values.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Create a table of values for $y = 2x + 6$ when $x = -6, -2$, and 4 .	x y -6 -6 -2 2 4 14
2	Create a table of values for $y = -6x + 2$ when $x = -2, 1$, and 4 .	x y -2 14 1 -4 4 -22
3	Create a table of values for $y = \frac{1}{2}x - 6$ when $x = -10, 0$, and 10 .	x y -10 -11 0 -6 10 -1
4	A graph of a line includes the points $(0, -14)$ and $(2, -6)$. Create a table of values for the line when $x = -2, 0$, and 6 .	x y -2 -22 0 -14 6 10
5	Create a table of values for $y = x - 12$ when $x = 1, 2$, and 6 .	x y 1 -11 2 -10 6 -6
6	Create a table of values for $y = -4x - 2$ when $x = -1, 2$, and 6 .	x y -1 2 2 -10 6 -26

PART 2 • APPLY IT

- x | y 1 | 6 6 | 16 11 | 26** Write $y = 2x + 4$. Substitute each number of sticker packs for x to find the total cost.
- x | y 2 | 10 4 | 18 6 | 26** Write $y = 4x + 2$. Substitute each number of game sessions for x to find the total cost.

CHALLENGE

x | y -6 | -14 -2 | -6 2 | 2 6 | 10 The line rises 4 while x moves 2, so y increases 2 for every increase of 1 in x . The rule is $y = 2x - 2$, so substitute each x -value.

Accept tables written as ordered pairs or with x and y columns. Equivalent explanations for the challenge should identify a rate of change of 2 and a starting value of -2.