

ANSWER ON QUESTION #55755 – Math – Algebra

One of the tables below contains (x,y) values that were generated by a linear function. Determine which table, and then write the equation of the linear function represented by the table.

Table # 1

X 2 5 8 11 14 17 20

Y 1 3 7 13 21 31 43

Table # 2

X 1 2 3 4 5 6 7

Y 10 13 18 21 26 29 34

Table # 3

X 2 4 6 8 10 12 14

Y 1 6 11 16 21 26 31

Solution

Consider the table #1. The equation for a linear function passing through two points (2,1) and (5,3) is

$$\frac{x - 2}{3} = \frac{y - 1}{2}$$

But the point (8,7) does not satisfy this equation. Therefore, the table does not define a linear function.

Consider the table #2. The equation for a linear function passing through two points (1,10) and (2,13) is

$$x - 1 = \frac{y - 10}{3}$$

But the point (3,18) does not satisfy this equation. Therefore, the table does not define a linear function either.

Consider the table #3. The equation for a linear function passing through two points (2,1) and (4,6) is

$$\frac{x - 2}{2} = \frac{y - 1}{5}$$

or

$$y = \frac{5}{2}x - 4$$

Other points of table #3 (6,11),(8,16),(10,21),(12,26),(14,31) satisfy this equation.

Answer: The table #3 defines the linear function $y = \frac{5}{2}x - 4$.