

# Algebra 1

## Section 5.4: Writing a Function Rule

### Notes

Name: KEY

In section 5.3, you analyzed a table of values to draw the graph of a function. In 5.4, you will take a table of values and try to write a function rule (equation) given that information.

Remember: INDEPENDENT variables are your "x" values (your "inputs")  
DEPENDENT variables are your "y" values (your "outputs")

1) Write a Function Rule for each table:

a)

x	f(x)
1	5
2	6
3	7
4	8

+4  
+4  
+4  
+4

$$f(x) = x + 4$$

\* Look for a pattern → how do you get from x to y??  
What are you doing to x to get y?

\* Has to work for all table values!  
Remember, f(x) and y are the same.

b)

x	f(x)
1	-1
2	0
3	1
4	2

-2  
-2  
-2  
-2

$$y = x - 2$$

c)

x	f(x)
1	1
3	9
5	25
7	49

1<sup>2</sup>  
3<sup>2</sup>  
5<sup>2</sup>  
7<sup>2</sup>

$$f(x) = x^2$$

\* multiplying x by itself -  
Squaring

d)

x	f(x)
1	3
2	5
3	7
4	9

\* multiply by 2, then add 1.

$$f(x) = 2x + 1$$

## 2) Writing a Function Rule from a Situation:

- a) The journalism class makes \$25 <sup>multiply</sup> per page of advertising in the yearbook. If the class sells "p" pages of advertising, how much money will it earn?

$$y = 25p$$

OR

$$f(p) = 25p$$

- b) The class sold 6 pages of advertising. How much money did the class make?

$$y = 25p$$

$$y = 25(6)$$

$$y = \$150$$

- c) The choir spent \$100 producing audio tapes of its last performance and will sell the tapes for \$5.50 each. Write a rule to describe the choir's profit as a function of the number of tapes sold: t.

t = tapes

$$f(t) = 5.50t - 100$$

- d) Write a function rule for the total distance d(n) traveled after "n" hours at a constant speed of 45 miles per hour. How far will you have traveled after 6 hours?

$$d(n) = 45n$$

$$= 45(6)$$

$$= 270 \text{ miles}$$

If you are given a graph and asked to write a function rule, make a table of points and figure out the rule from your table.

Always ask yourself: "What can I do to X to get y?"