

## 5.4 - Writing a Function Rule

### Vocabulary:

Function Rule - relates  $x$  to  $y$

Profit -

\$ made AFTER you  
subtract any costs to you

ex:  $f(x) = 4x - 2$

$$y = 4x - 2$$

$$4x - 2$$

1st: + -  
• ÷

2nd: look at my y's

3rd: try squaring x

OBJECTIVE  
1

1 EXAMPLE Write a function rule for each table.

1st

a.

x	f(x)
2	8
4	10
6	12
8	14

3rd

b.

x	y
1	2
2	5
3	10
4	17

$f(x) = x + 6$

$y = x^2 + 1$

2nd

x	y
1	15
2	18
3	21
4	24

x	y
2	14
4	22
6	30

$y = 3x + 12$

$y = 4x + 6$

Match each table with its rule.

1.  $y = 4x$  **B**

A.

x	y
-2	-6
-1	-5
0	-4
1	-3

2.  $y = x - 4$  **A**

~~B.~~

x	y
-1	-4
-2	-8
-3	-12
-4	-16

3.  $y = -4 - x$  **C**

C.

x	y
-1	-3
0	-4
1	-5
2	-6

**2 EXAMPLE** The journalism class makes \$25 per page of advertising in the yearbook. If the class sells  $p$  pages, how much money will it earn?

a. Write a function rule to describe this relationship.

$$C(p) = 25p$$

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

$$\begin{array}{r} 3 \\ 25 \\ \hline 150 \end{array}$$

$$C(P) = 25 \cdot P$$

$$C(6) = 25 \cdot 6$$

$$\boxed{\$150}$$

**11.** the total distance  $d(n)$  traveled after  $n$  hours at a constant speed of 45 miles per hour

$$d(n) = 45n$$

**3 EXAMPLE** 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.

$$P = 5.50t - 100$$

- 17. Food Costs** At a supermarket salad bar, the price of a salad depends on its weight. Salad costs \$.19 per ounce.  $n$
- Write a rule to describe the function.
  - How much would an 8-ounce salad cost?

$$a) y = 0.19n$$

$$b) y = 0.19(8) \\ = \$1.52$$

$$\begin{array}{r} 0.19 \\ \times 8 \\ \hline 1.52 \end{array}$$

Homework: pg. 272 #4-14even, 24, 30, 45, 46, 48