

Notes

- **Function - each input has exactly one output.**
- **Function notation uses $f(x)$ instead of the variable y .**
- $f(x)$ is a synonym for the variable y .
- **Input - the x values.**
- **Output - the y values.**
- **Domain - the input or the x values.**
- **Range - the output or the y values.**

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$D = x$
 $R = y$

Examples

1. Write $y = x + 2$ in function notation.

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

2. Find 4 input and output for $f(x) = -3x - 1$

| input | output | |
|-------|--------|----------------------------|
| 7 | -22 | $f(7) = -3(7) - 1 = -22$ |
| 3 | -10 | $f(3) = -3(3) - 1 = -10$ |
| 12 | -37 | $f(12) = -3(12) - 1 = -37$ |
| 6 | -19 | $f(6) = -3(6) - 1 = -19$ |

4-1 Functions

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

3. If $f(x) = 2x - 1$, find $f(3)$ and $f(5)$

$$f(3) = 2(3) - 1 = 5$$

$$f(5) = 2(5) - 1 = 9$$

4. Find the domain and range of the given



4. Find the domain and range of the given points.

(5, 3)

(4, 1)

(3, -1)

(2, -3)

Domain $\{5, 4, 3, 2\}$

Range $\{3, 1, -1, -3\}$

5. Write $4x + 2y = 7$ in function notation.

$$\begin{array}{r|l} -4x & -4x \\ \hline 2y & -4x + 7 \\ \hline \frac{2y}{2} & \frac{-4x + 7}{2} \end{array}$$

$$y = -2x + \frac{7}{2}$$

$$f(x) = -2x + \frac{7}{2}$$

6. Describe the domain and range for $f(x) = 5/x$.

Domain all numbers except 0

Range all numbers except 0

Assignment: Do the 4-1 worksheet



