

Lesson Five
Function Notation

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

- | | | | |
|--------------------------------|------------|---------------------------------|-------------|
| a. $f(2)$ | b. $f(-2)$ | c. $f(1)$ | d. $f(-3)$ |
| e. $f(5)$ | f. $f(-6)$ | g. $f(0)$ | h. $f(-40)$ |
| i. $f\left(\frac{1}{2}\right)$ | j. $f(-8)$ | k. $f\left(-\frac{5}{2}\right)$ | l. $f(100)$ |

2. If $f(x) = 2x - 7$, find:

- | | | | |
|--------------------------------|------------|---------------------------------|-------------|
| a. $f(2)$ | b. $f(-2)$ | c. $f(1)$ | d. $f(-3)$ |
| e. $f(5)$ | f. $f(-6)$ | g. $f(0)$ | h. $f(-40)$ |
| i. $f\left(\frac{1}{2}\right)$ | j. $f(-8)$ | k. $f\left(-\frac{5}{2}\right)$ | l. $f(100)$ |

3. If $f(x) = 2x^2 - 3$, find:

- | | | | |
|------------------|--------------|--------------------------------|---------------------------------------|
| a. $f(3)$ | b. $f(-4)$ | c. $f(0)$ | d. $f(2)$ |
| e. $f(\sqrt{2})$ | f. $f(100)$ | g. $f(-\sqrt{5})$ | h. $f(-6)$ |
| i. $f(\sqrt{8})$ | j. $f(-100)$ | k. $f\left(\frac{1}{2}\right)$ | l. $f\left(\frac{\sqrt{6}}{4}\right)$ |

4. If $f(x) = -2x + 3$, for what value(s) of x give each of the following values for $f(x)$?

- a. $f(x) = 0$ b. $f(x) = -6$ c. $f(x) = 4$ d. $f(x) = -10$ e. $f(x) = -15$ f. $f(x) = 2$

5. Graph each of the following linear functions from the function notation given.

a. $f(x) = 2x + 1$ for $f(-2)$, $f(0)$, $f(2)$

b. $f(x) = -3x - 4$ for $f(-2)$, $f(0)$, $f(2)$

c. $f(x) = \frac{1}{2}x + 4$ for $f(-2)$, $f(0)$, $f(2)$

d. $f(x) = -\frac{1}{3}x + 6$ for $f(-3)$, $f(0)$, $f(3)$

ANSWERS

$$\begin{array}{llll} 1a. 1 & 1b. 9 & 1c. 3 & 1d. 11 \\ 1e. -5 & 1f. 17 & 1g. 5 & 1h. 85 \\ 1i. 4 & 1j. 21 & 1k. 10 & 1l. -195 \end{array}$$

$$\begin{array}{llll} 2a. -3 & 2b. -11 & 2c. -5 & 2d. -13 \\ 2e. 3 & 2f. -19 & 2g. -7 & 2h. -87 \\ 2i. -6 & 2j. -23 & 2k. -12 & 2l. 193 \end{array}$$

$$\begin{array}{llll} 3a. 15 & 3b. 29 & 3c. -3 & 3d. 5 \\ 3e. 1 & 3f. 19997 & 3g. 7 & 3h. 69 \\ 3i. 13 & 3j. 19997 & 3k. $-\frac{5}{2}$ & 3l. $-\frac{9}{4}$ \end{array}$$

$$4a. \quad x = \frac{3}{2} \qquad 4b. \quad x = \frac{9}{2}$$

$$4c. \quad x = -\frac{1}{2} \qquad 4d. \quad x = \frac{13}{2}$$

$$4e. \quad x = 9 \qquad 4f. \quad x = \frac{1}{2}$$

5. The ordered pairs would be as follows, graph on calculator to check.

a. $(-2, -3)$ $(0, 1)$ $(2, 5)$

b. $(-2, 2)$ $(0, -4)$ $(2, -10)$

c. $(-2, 3)$ $(0, 4)$ $(2, 5)$

d. $(-3, 7)$ $(0, 6)$ $(3, 5)$