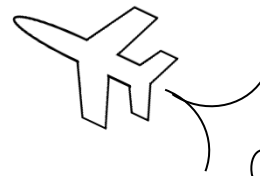


MAth on the Fly!



NAME: _____ DATE: _____

Evaluating Piecewise Functions

Evaluate and find each function value.

$$1. f(x) = \begin{cases} x + 1 & x < 1 \\ 3x - 2 & x \geq 1 \end{cases}$$

Find:

- a. $f(1)$
- b. $f(-2)$
- c. $f(3)$

$$2. f(x) = \begin{cases} -x - 3 & x \leq -2 \\ 5x^2 & x > -2 \end{cases}$$

Find:

- a. $f(-4)$
- b. $f(-2)$
- c. $f(3)$

$$3. f(x) = \begin{cases} |x + 4| & x \leq 0 \\ 4x + 1 & x > 0 \end{cases}$$

Find:

- a. $f(-5)$
- b. $f(0)$
- c. $f(5)$

$$4. f(x) = \begin{cases} 2x - 6 & x < -1 \\ x^3 & x \geq -1 \end{cases}$$

Find:

- a. $f(-3/2)$
- b. $f(-1)$
- c. $f(1/2)$

$$5. f(x) = \begin{cases} 2|x| & x < -3 \\ (x + 1)^2 & -3 \leq x < 4 \\ \sqrt{x} + 2 & x \geq 4 \end{cases}$$

Find:

- a. $f(-4)$
- b. $f(-3)$
- c. $f(0)$
- d. $f(4)$
- e. $f(9)$

$$6. f(x) = \begin{cases} 6x - 7 & x \leq -2 \\ 3^x - 2 & -2 < x \leq 1 \\ 1 - 8x & x > 1 \end{cases}$$

Find:

- a. $f(-6)$
- b. $f(-2)$
- c. $f(0)$
- d. $f(1)$
- e. $f(3)$

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SOLUTIONS

1.

- a. $f(1) = 3(1) - 2 = 1$
- b. $f(-2) = -2 + 1 = -1$
- c. $f(3) = 3(3) - 2 = 7$

2.

- a. $f(-4) = -(-4) - 3 = 1$
- b. $f(-2) = -(-2) - 3 = -1$
- c. $f(3) = 5(3)^2 = 45$

3.

- a. $f(-5) = |-5 + 4| = 1$
- b. $f(0) = |0 + 4| = 4$
- c. $f(5) = 4(5) + 1 = 21$

4.

- a. $f(-3/2) = 2(-3/2) - 6 = -9$
- b. $f(-1) = (-1)^3 = -1$
- c. $f(1/2) = (1/2)^3 = 1/8$ or 0.125

5.

- a. $f(-4) = 2|-4| = 8$
- b. $f(-3) = (-3 + 1)^2 = 4$
- c. $f(0) = (0 + 1)^2 = 1$
- d. $f(4) = \sqrt{4} + 2 = 4$
- e. $f(9) = \sqrt{9} + 2 = 5$

6.

- a. $f(-6) = 6(-6) - 7 = -43$
- b. $f(-2) = 6(-2) - 7 = -19$
- c. $f(0) = 3^{(0)} - 2 = -1$
- d. $f(1) = 3^{(1)} - 2 = 1$
- e. $f(3) = 1 - 8(3) = -23$