

Evaluating Piecewise Functions

A) Evaluate each function.

$$1) f(x) = \begin{cases} -x - 4 & , x \leq 5 \\ 2x^2 - 7 & , 5 < x \leq 10 \end{cases}$$

$$2) f(x) = \begin{cases} x^2 & , -15 \leq x \leq 0 \\ x - 5 & , 0 < x \leq 15 \end{cases}$$

i) $f(-2) =$ _____

i) $f(-5) =$ _____

ii) $f(7) =$ _____

ii) $f(15) =$ _____

$$3) f(x) = \begin{cases} \frac{6}{x} - 1 & , x \neq 0 \\ 3 & , x = 0 \end{cases}$$

$$4) f(x) = \begin{cases} 14 & , x \leq 0 \\ x^2 - 9x & , 0 < x < \infty \end{cases}$$

i) $f(3) =$ _____

i) $f(-5) =$ _____

ii) $f(0) =$ _____

ii) $f(1) =$ _____

B) If $f(x) = \begin{cases} x + 2 & , x \leq -7 \\ 8x & , -7 < x \leq 12 \end{cases}$; find the following.

1) $\frac{7f(6)}{4f(-9)} =$ _____

2) $3f(8) - f(-5) =$ _____

3) $-9f(-7) + f(0) =$ _____

4) $f(-1) \times 2f(2) =$ _____

C) If $f(x) = \begin{cases} (x + 4)^2 & , -20 \leq x \leq 0 \\ 3x^2 - x & , 0 < x \leq 20 \end{cases}$; what is the value of $f(-11)$?

i) 132

ii) -110

iii) 49

iv) -81

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$$1) f(x) = \begin{cases} -x - 4 & , x \leq 5 \\ 2x^2 - 7 & , 5 < x \leq 10 \end{cases}$$

$$2) f(x) = \begin{cases} x^2 & , -15 \leq x \leq 0 \\ x - 5 & , 0 < x \leq 15 \end{cases}$$

i) $f(-2) = \underline{\quad -2 \quad}$

i) $f(-5) = \underline{\quad 25 \quad}$

ii) $f(7) = \underline{\quad 91 \quad}$

ii) $f(15) = \underline{\quad 10 \quad}$

$$3) f(x) = \begin{cases} \frac{6}{x} - 1 & , x \neq 0 \\ 3 & , x = 0 \end{cases}$$

$$4) f(x) = \begin{cases} 14 & , x \leq 0 \\ x^2 - 9x & , 0 < x < \infty \end{cases}$$

i) $f(3) = \underline{\quad 1 \quad}$

i) $f(-5) = \underline{\quad 14 \quad}$

ii) $f(0) = \underline{\quad 3 \quad}$

ii) $f(1) = \underline{\quad -8 \quad}$

B) If $f(x) = \begin{cases} x + 2 & , x \leq -7 \\ 8x & , -7 < x \leq 12 \end{cases}$; find the following.

1) $\frac{7f(6)}{4f(-9)} = \underline{\quad -12 \quad}$

2) $3f(8) - f(-5) = \underline{\quad 232 \quad}$

3) $-9f(-7) + f(0) = \underline{\quad 45 \quad}$

4) $f(-1) \times 2f(2) = \underline{\quad -256 \quad}$

C) If $f(x) = \begin{cases} (x + 4)^2 & , -20 \leq x \leq 0 \\ 3x^2 - x & , 0 < x \leq 20 \end{cases}$; what is the value of $f(-11)$?

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