

## Evaluating Piecewise Functions

A) Evaluate each function.

$$1) f(x) = \begin{cases} x^2 - 9, & -1 < x < \frac{5}{3} \\ \frac{x+2}{x-2}, & \frac{5}{3} < x \leq 10 \end{cases}$$

$$2) f(x) = \begin{cases} 3x^2, & x < 0 \\ 1, & x = 0 \\ -x - 1, & 0 < x \end{cases}$$

i)  $f(1) =$  \_\_\_\_\_

i)  $f(0) =$  \_\_\_\_\_

ii)  $f(5) =$  \_\_\_\_\_

ii)  $f\left(-\frac{1}{2}\right) =$  \_\_\_\_\_

$$3) f(x) = \begin{cases} \frac{4}{(x+5)^2}, & -5 \leq x < 1 \\ -7, & 1 \leq x < \infty \\ 2(x+4), & \end{cases}$$

i)  $f(-3.5) =$  \_\_\_\_\_

ii)  $f(20) =$  \_\_\_\_\_

$$B) \text{ If } f(x) = \begin{cases} 6x^2, & - \\ \frac{x^2-1}{(x+1)^2}, & 2 \\ x-3, & 4 \end{cases}$$

1)  $f(-3) + 8f(9.2) =$  \_\_\_\_\_

3)  $3f\left(\frac{1}{2}\right) - f\left(\frac{1}{4}\right) =$  \_\_\_\_\_

4)  $\frac{f\left(\frac{1}{3}\right)}{2f(2)} =$  \_\_\_\_\_

C) If  $f(x) = \begin{cases} 28.25, & 0 < x < 9 \\ x^2 - 7x, & 9 \leq x \leq 18 \end{cases}$ , what is the value of  $f(10.5)$ ?

i) -31.25

ii) 36.75

iii) 28.25

iv) 42.5

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