

Discontinuity Limits: HW

Date _____

Evaluate each limit.

1) $\lim_{x \rightarrow 2} \frac{x^2 + x - 6}{x - 2}$

2) $\lim_{x \rightarrow -3} f(x), f(x) = \begin{cases} -x^2 - 6x - 6, & x \neq -3 \\ 0, & x = -3 \end{cases}$

3) $\lim_{x \rightarrow 1} f(x), f(x) = \begin{cases} 2x - 1, & x \neq 1 \\ -3, & x = 1 \end{cases}$

4) $\lim_{x \rightarrow 2} \frac{x^2 - 6x + 8}{x - 2}$

5) $\lim_{x \rightarrow 3} \frac{x^2 - 9}{x - 3}$

6) $\lim_{x \rightarrow 3} \frac{x - 3}{\sqrt{x - 2} - 1}$

$$7) \lim_{x \rightarrow 3} f(x), f(x) = \begin{cases} x^2 - 6x + 8, & x \neq 3 \\ 1, & x = 3 \end{cases}$$

$$8) \lim_{x \rightarrow 3} f(x), f(x) = \begin{cases} -x^2 + 10x - 24, & x \neq 3 \\ -4, & x = 3 \end{cases}$$

$$9) \lim_{x \rightarrow 2^-} f(x), f(x) = \begin{cases} 3, & x \leq 2 \\ x^2 - 8x + 15, & x > 2 \end{cases}$$

$$10) \lim_{x \rightarrow -3^-} \frac{5|x+3|}{x+3}$$

$$11) \lim_{x \rightarrow 1} f(x), f(x) = \begin{cases} x + 1, & x < 1 \\ x^2 + 1, & x \geq 1 \end{cases}$$

$$12) \lim_{x \rightarrow 1} f(x), f(x) = \begin{cases} -2x - 4, & x < 1 \\ -x^2 - 2x, & x \geq 1 \end{cases}$$

$$13) \lim_{x \rightarrow -1^-} \frac{x-3}{x^2+2x+1}$$

$$14) \lim_{x \rightarrow 1^+} \frac{3}{x-1}$$