Name_____

Calculus Practice: Limits that Do not Exist 1b

Evaluate each limit.

1) $\lim\limits_{x \to 0} f(x),\ f(x) = \begin{cases} -2x + 6,\ x \le 0 \\ -x + 3,\quad x > 0 \end{cases}$

2) $\lim\limits_{x \to -2} \dfrac{4\left|-x - 2\right|}{-x - 2}$

3) $\lim\limits_{x \to -2} f(x),\ f(x) = \begin{cases} -3,\qquad x \le -2 \\ 2x + 3,\ x > -2 \end{cases}$

4) $\lim\limits_{x \to 3} f(x),\ f(x) = \begin{cases} 2x - 2,\ x \le 3 \\ x,\qquad x > 3 \end{cases}$

5) $\lim\limits_{x \to 2} \left(-\dfrac{e^{\frac{1}{x - 2}}}{e^{\frac{1}{x - 2}} + 1} - 1 \right)$

6) $\lim\limits_{x \to -3} \dfrac{4x}{x + 3}$

7) $\lim\limits_{x \to -3} \dfrac{x + 1}{x^2 + 4x + 3}$

8) $\lim\limits_{x \to -\pi} -\csc\left(2x\right)$

9) $\lim\limits_{x \to \frac{\pi}{2}} -2\cot\left(2x\right)$

10) $\lim\limits_{x \to -\frac{\pi}{4}} -\tan\left(2x\right)$

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   Does not exist.

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