

Worksheet 4, Friday, June 28, 2019

Evaluate each of the following limits. Please **justify** your answers. Be clear if the limit equals a value, $+\infty$ or $-\infty$, or Does Not Exist.

1. $\lim_{x \rightarrow 5} \frac{1}{x - 5} =$

2. $\lim_{x \rightarrow 5} \frac{1}{(x - 5)^2} =$

3. $\lim_{x \rightarrow 7} \frac{x + 4}{x - 7} =$

4. $\lim_{x \rightarrow 3} \frac{x^2 - 12x + 27}{x^2 - 6x + 9} =$

5. $\lim_{x \rightarrow 4} \frac{x + 2}{4 - x} =$

6. $\lim_{x \rightarrow -4} \frac{x + 2}{(x + 4)^2} =$

7. $\lim_{x \rightarrow 1} \frac{G(x + 2) + x - 8}{G(2x) - 3x^2 - 3x + 2} =$ where $G(x) = (x - 1)^2 + 3$ (challenge)

8. $\lim_{x \rightarrow 2} \frac{x^2 - 9x + 14}{x^2 - 4x + 4} =$