

Blizzard Bag #1

Review of limits

Evaluate each limit showing all work.

So all work on a separate piece of paper.

1) $\lim_{x \rightarrow 8} \frac{x^2 - 64}{x - 8}$

2) $\lim_{y \rightarrow 0} \frac{\sqrt{3y+2} - \sqrt{2}}{y}$

3) Let $f(x) = \begin{cases} x^2 - 9, & x < 3 \\ 5, & x = 3 \\ 9 - x^2, & x > 3 \end{cases}$

a) $\lim_{x \rightarrow 3^+} f(x)$

b) $\lim_{x \rightarrow 3^-} f(x)$

c) $\lim_{x \rightarrow 3} f(x)$

d) $f(3)$

4) $\lim_{x \rightarrow \infty} \frac{4x^2 - 3}{3x + 3}$

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

6) $\lim_{x \rightarrow \infty} \frac{3x^3 - 1}{4x + 3}$

7) $\lim_{x \rightarrow 4^-} \frac{3x}{16 - x^2}$

8) $\lim_{x \rightarrow -2} (3x^2 - 3x + 1)$