

Quiz #2

1) Find the following limits

a) $\lim_{x \rightarrow -\infty} \sqrt[3]{\frac{-16x^4 - 2x + 1}{2x^4 - 5}}$

b) $\lim_{x \rightarrow +\infty} (\sqrt{x^2 + 5x} - \sqrt{x^2 - 7x})$

2) Use the $\varepsilon - \delta$ definition to show that $\lim_{x \rightarrow 2} (5 - 4x) = -3$

3) For which value of k , is the following function continuous everywhere

$$f(x) = \begin{cases} x^2 + 4x + 3 & \text{if } x < 2 \\ kx + 5 & \text{if } x \geq 2 \end{cases}$$