

Name : _____

I.D.#: _____ Serial #:

Q1: Find the number a so that the function $f(x) = \begin{cases} 2x - 1 & \text{if } x < 1 \\ ax^2 - 5 & \text{if } x \geq 1 \end{cases}$ is continuous everywhere

Q2 For the function $f(x) = 3x^2 - 5$, find a suitable δ for $\epsilon = .001$ to show that $\lim_{x \rightarrow 1} (3x^2 - 5) = -2$

Q3 Evaluate the limit $\lim_{x \rightarrow 0} \frac{\sin 2x}{3x}$

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Q1: Find the number a so that the function $f(x) = \begin{cases} 3x - 1 & \text{if } x < 2 \\ ax^2 - 4 & \text{if } x \geq 2 \end{cases}$ is continuous everywhere

Q2 For the function $f(x) = 5x - 3$, find a suitable δ for $\epsilon = .002$ to show that $\lim_{x \rightarrow 2} (5x - 3) = 7$

Q3 Evaluate the limit $\lim_{x \rightarrow 0} \frac{\sin 3x}{5x}$

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Q1: Find the number a so that the function $f(x) = \begin{cases} \frac{\sqrt{1-x}}{x} - 1 & \text{if } x \neq 0 \\ x - a & \text{if } x = 0 \end{cases}$ is continuous everywhere

Q2 For the function $f(x) = 2x - 5$, find a suitable δ for $\epsilon = .001$ to show that $\lim_{x \rightarrow 1} (2x - 5) = 7$

Q3 Evaluate the limit $\lim_{x \rightarrow 0} \frac{\sin 2x}{5x}$

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Q1: Find the number a so that the function $f(x) = \begin{cases} \frac{\sqrt{4-x} - 2}{x} & \text{if } x \neq 0 \\ x + a & \text{if } x = 0 \end{cases}$ is continuous everywhere

Q2 For the function $f(x) = 4x^3 - 5$, find a suitable δ for $\epsilon = .002$ to show that $\lim_{x \rightarrow 2} (4x^3 - 5) = 27$

Q3 Evaluate the limit $\lim_{x \rightarrow 0} \frac{\sin 4x}{3x}$