

Sample Quiz 1

Evaluate each of the following limits (for five marks each), and simplify the results. Be sure to write organized solutions.

1. $\lim_{x \rightarrow -\frac{2}{3}} \frac{9x^3 - 7x - 2}{9|x^2 - 1| - 5}$

2. $\lim_{y \rightarrow 0} \frac{2 \tan(3y) - \sin(y)}{3y + 2 \sin(2y)}$

3. $\lim_{x \rightarrow -2} \frac{2x + 1 + \sqrt{5 - 2x}}{x^3 + 8}$

4. $\lim_{x \rightarrow -\infty} \{2x + 1 + \sqrt{3 - 5x + 4x^2}\}$

5. $\lim_{x \rightarrow 0} \frac{1 - \cos(6x)}{x \tan(5x)}$

6. $\lim_{\vartheta \rightarrow \frac{4}{3}\pi^-} \frac{\tan(2\vartheta)}{2\cos(\vartheta)+1}$

7. $\lim_{x \rightarrow 7} \frac{\frac{x}{2x-5} - \frac{7}{x+2}}{\sqrt[3]{4x-1} - 3}$

8. $\lim_{x \rightarrow 5} \frac{\sqrt{2x-1} - 3}{2 - \sqrt{x-1}}$

9. Find all values of a and b , if any, such that $\lim_{x \rightarrow 2} \frac{\sqrt{ax+b} - 3}{2x^4 - 9x^2 + 4} = \frac{1}{24}$.
