

Homework Find the limits or show they do not exist

1. $\lim_{x \rightarrow 0} [\sin \sqrt{x+1} - \sin \sqrt{x}]$

2. $\lim_{x \rightarrow 0} \frac{\sqrt{1-\cos^3 x}}{1-\cos x}$

3. $\lim_{x \rightarrow \infty} \frac{1 + \sqrt{x} + \sqrt[3]{x}}{1 + \sqrt[3]{x} + \sqrt[4]{x}}$

4. $\lim_{x \rightarrow \infty} \frac{\sin e^x}{x}$

5. $\lim_{x \rightarrow \infty} \frac{x + \sin x}{\sqrt{x^2 + 1}}$

6. $\lim_{x \rightarrow \infty} (\sqrt[3]{x^3 + 1} - x)$

7. $\lim_{x \rightarrow \frac{1}{2}} \frac{x}{2x-1}$

8. $\lim_{x \rightarrow 1} \frac{x^{100} - 2x + 1}{x^{50} - 2x + 1}$

9. Formulate the negation of: $\lim_{x \rightarrow a} f(x) = \infty$

10. Formulate $\lim_{x \rightarrow a^-} f(x) = -\infty$. Negate