

Limits at Infinity

Evaluate the following limits.

1. $\lim_{x \rightarrow \infty} \frac{2x^2 + x - 3}{3x^2 - 2x + 1}$

2. $\lim_{x \rightarrow -\infty} \frac{x^2 + 3x}{5 - x}$

3. $\lim_{x \rightarrow \infty} \cos\left(\frac{1}{x^2}\right)$

4. $\lim_{x \rightarrow -\infty} \sin\left(\frac{1}{x^3}\right)$

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

6. $\lim_{x \rightarrow -\infty} \frac{x + 2}{\sqrt{9x^2 + 1}}$

7. $\lim_{x \rightarrow \infty} (x^3 + x^2)$

8. $\lim_{x \rightarrow \infty} (x - \sqrt{x})$

9. $\lim_{x \rightarrow \infty} (2 + x)^3$

10. $\lim_{x \rightarrow -\infty} (x + \sqrt{x^2 + 2x})$