

# Unit 2 Worksheet 5

## Calculus 1

Evaluate the following limits at infinity.

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

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

3.  $\lim_{x \rightarrow \infty} \frac{6x^2}{2x^2 + x + 1}$

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

5.  $\lim_{x \rightarrow \infty} \frac{2x^3 - 3x^2 + 1}{7 - 4x + 5x^3}$

6.  $\lim_{x \rightarrow -\infty} \frac{5x + 1}{1 - x}$

7.  $\lim_{x \rightarrow \infty} \frac{(3x - 2)(2x + 4)}{(2x + 1)(x + 2)}$

8.  $\lim_{x \rightarrow -\infty} \frac{3x^3 - 4x + 1}{(x^2 + 1)(x^2 - 1)}$

9.  $\lim_{x \rightarrow \infty} \frac{5x^4 - 7x^3 + 1}{3x^3 - 11x + 2}$

10.  $\lim_{x \rightarrow \infty} \frac{2x^3 + x - 13}{2 - 8x - 7x^2}$

11.  $\lim_{x \rightarrow -\infty} \frac{\sqrt{25x^2 + 3x - 7}}{2x - 1}$

12.  $\lim_{x \rightarrow \infty} \frac{\sqrt{3x^4 + x}}{x^2 - 8}$