

### MA1 Homework 4 (Evaluating Limits at Infinity)

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

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

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

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

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

6.  $\lim_{x \rightarrow -\infty} |x| =$

7.  $\lim_{a \rightarrow \infty} \frac{|a|}{|a|+1} =$

8.  $\lim_{x \rightarrow \infty} \frac{3x^3 + 5x^2 - 7}{10x^3 - 11x + 5} =$

9.  $\lim_{x \rightarrow \infty} \left( \frac{x}{x+1} \right) \left( \frac{x^2}{5+x^2} \right) =$

10.  $\lim_{n \rightarrow \infty} \frac{8n^2 + 7n}{4n^2} =$

11.  $\lim_{y \rightarrow \infty} \frac{y^4}{y^4 - 7y^3 + 7y^2 + 9} =$

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

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

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

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

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

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

18.  $\lim_{x \rightarrow \infty} \frac{x^3 - 4x + 3}{3x^3 + 2x - 11} =$

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

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

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

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