

PRACTICE 5.1 – Limits

* Full, worked solutions can be found in the folder linked on the Course Website ☺

Exercise 5A

Use technology to examine each function numerically and graphically. Find the limit as x tends toward the given value, if it exists.

1 $\lim_{x \rightarrow 3} (x^2 + 1)$

2 $\lim_{x \rightarrow 1} (5 - 2x)$

3 $\lim_{x \rightarrow 0} \frac{2x^2 - x}{x}$

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

Exercise 5B

State the equations of any vertical and horizontal asymptotes for each of the following functions.

1 $f(x) = \frac{3x}{6x - 1}$

2 $g(x) = \frac{x^2 + 3}{3 - x^2}$

3 $h(x) = \frac{1 - x - x^3}{x^3 - 1}$

4 $k(x) = -\frac{5x}{x^2 - 2}$