

**Exercise 7B**

Use a GDC to examine each function graphically and numerically. Find the limit or state that it does not exist.

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

2 $\lim_{x \rightarrow 0} \frac{x^3 - 4x^2 + x}{x}$

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

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

5 $\lim_{x \rightarrow 1} f(x)$; where $f(x) = \begin{cases} x + 3 & \text{for } x \geq 1 \\ -x + 5 & \text{for } x < 1 \end{cases}$

6 $\lim_{x \rightarrow 2} f(x)$; where $f(x) = \begin{cases} x^2 + 3 & \text{for } x \geq 2 \\ x & \text{for } x < 2 \end{cases}$