

Find the limits and use the definition of limit to prove they are what you say.

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

2. $\lim_{x \rightarrow 4} (x^2 - 5x + 8)$

3. $\lim_{x \rightarrow 1} \left(\frac{x + 3}{x + 1} \right)$

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