

Find each of the following limits algebraically. Show work!

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

2. $\lim_{x \rightarrow 5} \frac{x^2 - 2x - 15}{x - 5} =$

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

4. $\lim_{x \rightarrow 2} \frac{(2x + 1)^2 - 25}{x - 2} =$

5. $\lim_{x \rightarrow 1} \frac{\frac{2x}{x+1} - 1}{x - 1} =$

6. $\lim_{x \rightarrow -2} \frac{x^4 - 2x^2 - 8}{x^2 - x - 6} =$

7. $\lim_{x \rightarrow 0} \frac{x^2 + 7x + 6}{x + 3} =$

8. $\lim_{x \rightarrow 2} \frac{x^3 + x^2 - 4x - 4}{x^2 + x - 6} =$

9. $\lim_{x \rightarrow -1} \frac{\frac{1}{x} + 1}{x + 1} =$

10. $\lim_{x \rightarrow 0} \frac{(x + 1)^2 - 1}{x} =$

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

12. $\lim_{x \rightarrow 2} \frac{(3x - 2)^2 - (x + 2)^2}{x - 2} =$

13. $\lim_{x \rightarrow 2} \frac{\frac{2}{x^2} - \frac{1}{2}}{x - 2} =$

14. $\lim_{x \rightarrow 1} \frac{x - 1}{\sqrt{x} - 1} =$

15. $\lim_{x \rightarrow -2} \frac{\frac{x}{x+4} + 1}{x + 2} =$

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