Station: Limits Analytically (Algebraically)

Find the indicated limit analytically.

1. $\lim\limits_{x \to -3} (3x + 2)$

2. $\lim\limits_{x \to 1} \dfrac{2x^2 + x - 3}{x - 1}$

3. $\lim\limits_{x \to 2} \dfrac{x^2 - 5x + 6}{x - 2}$

4. $\lim\limits_{x \to 1} \dfrac{\sqrt{x+3} - 2}{x - 1}$

5. $\lim\limits_{x \to 9} \dfrac{\sqrt{x} - 3}{x - 9}$

6. $\lim\limits_{x \to \infty} \dfrac{5x^3 - 6x^2 + 3}{2x^3 + 7x^2 - 9}$

7. $\lim\limits_{x \to \infty} \dfrac{9x^4 + 7x^2 + 8x}{4x^3 + 3x - 12}$

8. $\lim\limits_{x \to -\infty} \dfrac{3x^3 - 7x^2 + 5x + 1}{7x^5 + 2x + 5}$

9. $\lim\limits_{x \to 0} \dfrac{\sin 5x}{3x}$