

$$37. > \frac{d}{dx} \left[ \frac{2x^2 - 3x + 1}{x^3 + 2x^2 - 8x - 18} \right] = \left( \frac{\frac{d}{dx} [2x^2 - 3x + 1] \cdot [x^3 + 2x^2 - 8x - 18] - [2x^2 - 3x + 1] \cdot \frac{d}{dx} [x^3 + 2x^2 - 8x - 18]}{(x^3 + 2x^2 - 8x - 18)^2} \right)$$

$$= \frac{[4x - 3] [x^3 + 2x^2 - 8x - 18] - [2x^2 - 3x + 1] [3x^2 + 4x - 8]}{(x^3 + 2x^2 - 8x - 18)^2}$$

$$= \frac{\begin{array}{c} 4x^4 + 8x^3 - 32x^2 - 72x - 3x^3 - 6x^2 - 24x + 54 \\ 4x^4 + 8x^3 - 35x^2 - 46x + 54 \end{array} - \begin{array}{c} 6x^4 + 8x^3 - 16x^2 - 9x^3 - 12x^2 - 24x + 3x^2 + 4x - 8 \\ -12x^3 + 11x^2 - 20x - 8 \end{array}}{(x^3 + 2x^2 - 8x - 18)^2}$$

$$\frac{-2x^4 + 6x^3 - 13x^2 - 76x - 62}{(-x^3 - 2x^2 + 8x + 18)^2} = \frac{-2x^4 + 6x^3 - 13x^2 - 76x - 62}{(-x^3 - 2x^2 + 8x + 18)^2}$$