

**Example 1.** Find  $\frac{d}{dx}(3x + e^x)(x^2 - 4e^x)$ .

**Example 2.** Find  $\frac{d}{dx}(x + e^{3x-1})\left(\frac{1}{x} + x\right)$ .

**Example 3.** Find  $\frac{d}{dx} \frac{2x + 1}{e^x + x}$ .

**Example 4.** Find the derivative of  $\frac{t + \sqrt{t}}{t^2 + \ln(t)}$ .