

Math 2215 - Calculus 1

Quiz #4 - 2005.09.13

Solutions

1. Solve the following expression for y .

$$e^{x+\ln(y)} = 2x^2 + 3x - 7y$$

$$e^x y = 2x^2 + 3x - 7y$$

$$(e^x + 7)y = 2x^2 + 3x$$

$$y = \frac{2x^2 + 3x}{e^x + 7}.$$

2. Compute the following limit:

$$\begin{aligned} \lim_{x \rightarrow \infty} \frac{3x^3 + 2x^2 \sin(x) - 12}{12x^3 + 2x + 6} \\ &= \lim_{x \rightarrow \infty} \frac{3 + \frac{2}{x} \sin(x) - \frac{12}{x^3}}{12 + \frac{2}{x^2} + \frac{6}{x^3}} \\ &= \frac{3}{12} = \frac{1}{4}. \end{aligned}$$