Math 131 Quiz #3 **Name:** Answer Key

Find the derivative of the following functions:

1. $y = e^x$

$y' = e^x$

2. $f(x) = (x+1)^3 e^{4x}$

$f'(x) = 3(x+1)^2 e^{4x} + 4(x+1)^3 e^{4x}$

3. $f(t) = \dfrac{t+3}{(2t+1)^2}$

$f'(t) = \dfrac{(2t+1)^2(1) - (t+3)\,2(2t+1)(2)}{(2t+1)^4} = \dfrac{(2t+1)(2t+1-4t-12)}{(2t+1)^4}$

$f'(t) = \dfrac{-2t-11}{(2t+1)^3}$

4. $y = e^{3x^2+5x}$

$y' = (6x+5)e^{3x^2+5x}$