MATH 150

Today

1. 5.3: Derivatives of exponential and logarithmic functions

Goals:

1. Derivatives of exponential functions (Understand the derivative formulas for the different forms of exponential functions)
2. Derivatives of logarithmic functions (Understand the derivative formulas for the different forms of logarithmic functions)

Where is today's material used?

1. Physics: radioactive decay
2. Biology: population growth
3. Economics: interest

5.3 Derivatives of Exponential and Logarithmic Functions

1. Derivatives of exponential functions ($\frac{d}{dx}e^x = e^x, \frac{d}{dx}b^x = b^x \ln b$)
2. Derivatives of logarithmic functions ($\frac{d}{dx}\ln|x| = \frac{1}{x}, \frac{d}{dx}\log_b x = \frac{1}{x \ln b}$)
3. Examples. p. 373: 17, 19, 20, 21, 22, 26, 32, 37, 38, 45, 50, 63, 70, 72, 76

Next Time

1. 5.4: Applications of exponential and logarithmic functions
2. Homefun