Exponential Functions: Differentiation and Integration  
Section 5.4a

Now we come to one of the easiest functions to differentiate and integrate: \( f(x) = e^x \). To derive the derivative of \( y = e^x \), it helps to look at the graph of \( y = e^x \). Sketch the graph of \( y = e^x \) below.

With your teacher, graph \( \frac{d(e^x)}{dx} \) or the slope of \( y = e^x \) below.

So, \( \frac{d(e^x)}{dx} = \) _______.


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For example, consider \( y = e^{2x-1} \).

Now, you try.

1. \( y = e^{\left(\frac{-3}{x}\right)} \)

2. \( y = \frac{e^x}{2x+3} \)