

name: Solution

1 (12 points). Use linear approximation to estimate the value of  $e^{0.06}$

Tangent line to  $y = e^x$  @  $(0, e^0) = (0, 1)$

$$\bullet \quad x_0 = 0, \quad y_0 = 1, \quad f'(0) = e^0 = 1$$

$$y - 1 = 1(x - 0) \quad \Rightarrow \quad \underline{y = x + 1}$$

Plug in  $x = 0.06$

$$y = 0.06 + 1 = \underline{\underline{1.06}}$$