

(1) [4 points] Determine the limit:

$$\lim_{x \rightarrow 3^+} e^{2/(3-x)}$$

(2) [4 points] Differentiate:

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

(2) [7 points] Use logarithmic differentiation to determine the derivative:

$$y = (\sec x)^{1/x}$$