

Present neatly on separate paper. Justify for full credit. No Calculators.

Name _____ Score _____ 15 minutes

1. Find dy/dx . [5 points]

a)

$$y = \frac{1}{\tan^{-1} x}$$

b)

$$y = 2^{\cos x + \ln x}$$

2. Find the limit or explain why it doesn't exist. [5 points]

a)

$$\lim_{\Delta x \rightarrow 0} \frac{9 \left[\sin^{-1} \left(\frac{\sqrt{3}}{2} + \Delta x \right) \right]^2 - \pi^2}{\Delta x}$$

b)

$$\lim_{h \rightarrow 0} \frac{\tan^{-1}(1+h) - \pi/4}{h}$$

3. Find dy/dx . [5 points]

$$\sin^{-1}(xy) = \cos^{-1}(x - y)$$
