

Name: _____ ID #: _____ Section: 02

Q.1 (4 points) Find the derivative of the function.

a) $F(t) = \frac{t \sin t}{1 + t}$

b) $y = 10^{2\sqrt{t}}$

c) $y = \left(\sin x + \frac{1}{x}\right)^6$

Q.2 (3 points) Find the limit:

$$\lim_{\theta \rightarrow 0} \frac{\cos \theta - 1}{2\theta^2}$$

Q.3 (3 points) If $h(x) = \sqrt{4 + 3f(x)}$, $f(1) = 7$ and $f'(1) = 4$, find $h'(1)$.