

Answers for Quiz #7

1. a. $\frac{dy}{dx} = \left[-2x \ln x - x\right] \left(\frac{1}{x}\right)^{x^2}$
- b. $\frac{dy}{dx} = [4 \ln |\sin x| + 4x \cot x] (\sin^2 x)^{2x}$
- c. $\frac{dy}{dx} = \frac{3}{\sqrt{9e^{2x} - 1}}$
- d. $\frac{dy}{dx} = \frac{-4x}{|2x| \sqrt{1 - 4x^2}}$
- e. $\frac{dy}{dx} = 4 \arctan 2x$

2. Increasing: $(-1, 0)$; Decreasing $(0, 1)$; Relative max: $(0, \pi/2)$

3. a. $e^2 - e$
- b. $\frac{1}{\pi} e^{\tan \pi x} + C$
- c. $2\sqrt{\ln 3}$
- d. $\frac{1}{6}(1 + e^x)^6 - \frac{1}{5}(1 + e^x)^5 + C$

If you feel that there are errors with this answer page, please email Brian Beck-Smith at bbeck@utdallas.edu.