SECTION 4.4

4.4.1 Use implicit differentiation to find $\dfrac{dy}{dx}$ if $x \ln y = 1$.

4.4.2 Use implicit differentiation to find $\dfrac{dy}{dx}$ if $xy = \ln(x \tan y)$.

4.4.3 Find $f'(x)$ if $f(x) = \ln\left(2x\sqrt{2+x}\right)$.

4.4.4 Find $f'(x)$ if $f(x) = \ln(\tan x + \sec x)$.

4.4.5 Find $f'(x)$ if $f(x) = x \ln \sin 2x + x^2$.

4.4.6 Use logarithmic differentiation to find $\dfrac{dy}{dx}$ if $y = \dfrac{x\sqrt{x^2+1}}{(x+1)^{2/3}}$.

4.4.7 Use logarithmic differentiation to find $\dfrac{dy}{dx}$ if $y = \sqrt[3]{\dfrac{(x^2+5)\cos^4 2x}{(x^3-8)^2}}$.

4.4.8 Find $f'(x)$ if $f(x) = \ln\left(3x\sqrt{3-x^2}\right)$.

4.4.9 Use logarithmic differentiation to find $\dfrac{dy}{dx}$ if $y = \sqrt[5]{\dfrac{\tan x}{(1+x^5)^3}}$.

4.4.10 Find $f'(x)$ if $f(x) = e^{x \sin x}$.

4.4.11 Find $f'(x)$ if $f(x) = e^{-2x} \sin 3x$.

4.4.12 Find $\dfrac{dy}{dx}$ if $y = (\sin x)^x$.

4.4.13 Find $f'(x)$ if $f(x) = \dfrac{e^{\ln 2x}}{2x}$.

4.4.14 Find $f'(x)$ if $f(x) = x^4 4^x$.

4.4.15 Find $\dfrac{dy}{dt}$ if $y = (\tan t)^t$.

4.4.16 Find $f'(x)$ if $f(x) = e^x + x^e$.

4.4.17 Find $f'(x)$ if $f(x) = (\sec x)^{\cos x}$.

4.4.18 Use implicit differentiation to find dy/dx if $\tan y = e^x + \ln x$.

4.4.19 Use implicit differentiation to find dy/dx if $e^{2x} = \sin(x + 3y)$.