## 3.9 Derivatives of Exponential and Logarithmic Functions

### Homework Problems

1. $y = \ln x^3$ F: slope of tangent line at (1,0)
2. $y = \ln x^2$ F: slope of tangent line at (1,0)
3. $y = (\ln x)^4$ F: dy/dx
4. $y = \ln\left[\frac{x}{x^2+1}\right]$ F: dy/dx
5. $g(t) = \frac{\ln t}{t^2}$ F: g '(t)
6. $y = \ln ( \ln x^2 )$ F: dy/dx
7. $y = \ln\sqrt{\frac{x+1}{x-1}}$ F: dy/dx

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8. $x^2 - 3 \ln y + y^2 = 10$ F: dy/dx
9. $y = 3x^2 - \ln x$ F: equation of tangent line at (1,3)
10. $f(x) = e^{2x}$ F: dy/dx
11. $f(x) = e^{-2x+x^2}$ F: y '
12. $f(x) = e^{\sqrt{x}}$ F: dy/dx
13. $g(x) = (e^{-x} + e^{x})^3$ F: g '(x)
14. $y = \ln (e^{x^2})$ F: dy/dx
15. $y = \ln (1+ e^{2x})$ F: dy/dx

 

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16. $y = x^2e^x - 2xe^x + 2e^x$ F: dy/dx

17. $y = e^x (\sin x + \cos x)$ F: y '

18. $xe^y - 10x + 3y = 0$ F: dy/dx

Answers with different #'s but in sequence:

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