Calculus H
Ch. 3 #15

Name _____

For each of the following, find the derivative.

1. $f(x) = 5e^{3x}$

2. $g(x) = -4e^{\cos x}$

3. $f(x) = 2\sin\left(e^{4x}\right)$

4. $f(x) = 10\ln(7x)$

5. $T = 18\ln x^3$

6. $y = 3\ln(\cos 5x)$

7. $u = 6\ln\left(\sin x^{0.5}\right)$

8. $r(x) = \ln e^x$

9. $f(x) = 3^x$

10. $y = 1.6^{\cos x}$

11. $g(x) = 8\ln\left(x^5\right)$

12. $T(x) = \log_5(\sin x)$

13. $q(x) = \dfrac{\log_9 x}{\log_3 x}$

14. $f(x) = \ln\dfrac{x^3}{\sin x}$

15. $y = \ln x^{3x}$

16. Find $\dfrac{d^2y}{dx^2}$ *if* $y = \ln x^5$

17. Find y'' *if* $y = e^{-0.7x}$

18. If $f'(x) = 12e^{2x}$, find the antiderivative function f(x).