

AP Calculus Chapter 7 Derivatives & Integrals of Logs and Exponents Review Video

Differentiate each function with respect to x .

1. $y = e^{2x^3}$

2. $y = \ln \ln (2x^4)$

3. $y = e^{e^{3x^2}}$

4. $y = e^{(4x^3+5)^2}$

5. $y = \ln\left(-\frac{4x^4}{x^3-3}\right)^5$

6. $y = \frac{e^{5x^4}}{e^{4x^2+3}}$

7. $y = xe^2 - e^x$

8. $y = \ln\left(\frac{10}{x}\right)$

9. $y = \log_3 3x^2$

10. $y = \log_5(-5x^3 - 2)^3$

11. $y = 3^{(x^4+1)^3}$

Evaluate each indefinite integral.

12. $\int \frac{20x^4}{4x^5+3} dx$

13. $\int \frac{2}{x(-1+\ln 4x)} dx$

$$14. \int 80x^3 \cdot 3^{5x^4-2} dx$$

$$15. \int 10\sin(-2x) \cdot e^{\cos(-2x)} dx$$

$$16. \int \frac{20e^{5x}}{e^{5x}+3} dx$$

$$17. \int \left(\frac{4}{3t^2} + \frac{7}{2t}\right) dt$$

$$18. \int \left(5\sqrt{y} + \frac{3}{\sqrt{y}}\right) dy$$

$$19. \int \left(\frac{3x^2+4x+1}{2x}\right) dx$$

$$20. \int (5e^x - e) dx$$