

Chapter 5 Add On Review Online Video 2

Find the derivative of each.

1. $y = \ln^4 x$

2. $f(x) = \frac{x^3}{2\ln x}$

3. $y = 2^{-4x}$

4. $f(x) = \sin^{-1}(5x)$

5. $f(x) = 2\arcsin(3x)$

6. $f(x) = 3^{x-2}$

Integrate each.

7. $\int \frac{8}{\sqrt{36-x^2}} dx$

8. $\int \frac{8}{9+4x^2} dx$

9. $\int e^{3x+2} dx$

10. $\int 4^x dx$

11. $\int \frac{e^{-x}}{1+e^{-x}} dx$

12. Find $(f^{-1})'(a)$ for $f(x) = x^3 - \frac{4}{x}$ at $a = 6$.

Find the derivative of each.

13. $y = \ln(x^5 \cos^2 x)$

14. $y = \frac{\ln x}{2+x}$

15. $f(x) = 8^{4x^5}$

16. $f(x) = e^{3x^7 - 4x^2}$

Integrate each.

17. $\int \tan(2x - 3) dx$

18. $\int \frac{3x^2}{x^3-4} dx$

19. $\int \frac{3 \sin(\ln x)}{x} dx$

20. $\int \frac{\cos x}{2 - \sin x} dx$

21. $\int 4^{3x} dx$

22. $\int_1^e \frac{\sqrt{\ln x}}{x} dx$

23. Find $(f^{-1})'(a)$. $f(x) = \sqrt{2x^3 + x^2 - x + 2}$, $a = 2$.

24. If $h(x) = x^2 + 2x + 1$, find $h^{-1}(9)$.

25. If $f(x) = \frac{x}{\ln x}$, find $f'(e^3)$

26. Find the equation of the tangent line to the curve at the given point:

$$y = \ln(e^x - x^3) \text{ at } x = 0$$