

Chain Rule

Directions: Use the chain rule (and whatever rules are also needed) to find the derivative of each function.

1. $y = \tan(4x^2)$

13. $y = \tan^{-1}(x^4)$

2. $y = \sin 3x \cos 2x$

14. $y = [\cos^{-1}(x + 5)]^2$

3. $y = e^{x^2-5x+1}$

15. $y = (x^3 - \sec x)^3$

4. $y = 2^{\cos x}$

16. $y = \sec^{-1}(\sin x)$

5. $y = \ln(3x^2 + 1)$

6. $y = \log_2(\sin x)$

17. $y = 3^{x-\sin 2x}$

7. $y = \sin^{-1}(x^3)$

8. $y = \sin^3(x^2)$

18. $y = (e^x)^2$

9. $y = (3x^2 + 3)^7$

19. $y = \log_2(\ln x)$

10. $y = x^2 \tan^2(x^2)$

11. $y = \frac{\ln(x^3-1)}{x}$

20. $y = e^{4x-8 \ln x}$

12. $y = e^{\sin(x^2)}$