

Worksheet on Chain Rule

Find the derivative.

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

2. $y = \sqrt{5 - 3x}$

3. $y = (9x + 3)^{\frac{2}{3}}$

4. $y = \left(\frac{1}{x-3}\right)^2$

5. $y = x(3x - 9)^3$

6. $y = \left(\frac{3x^2 - 2}{2x + 3}\right)^3$

7. $y = \cos 3x$

8. $y = \sin \pi x$

9. $y = 4 \sec^2 x$

10. $y = \sin(\cos x)$

11. $y = \sin \sqrt[3]{x} - \sqrt[3]{\sin x}$

12. $y = \sqrt{x} + \frac{1}{4} \sin(2x)^2$

13. $y = \cos(1 - 2x)^2$

14. $y = \frac{\cot x}{\sin x}$

15. $y = \frac{1}{2} x^2 \sqrt{16 - x^2}$

16. $y = \csc^3 x$

17. $y = \sqrt{x^2 - 2x + 1}$

18. $y = \frac{1}{3t^2 + 2t - 1}$

19. $y = x^2 \tan\left(\frac{1}{x}\right)$

20. $y = \sin(\cos(\tan x))$

