

Place the number of the basic derivative formula (1 - 26 from the sheet of Derivative Formulas) next to each derivative problem below (you do not need to solve the problem):

Given $y = f(x)$, determine $\frac{dy}{dx}$:

_____ 1. $y = 8x$

_____ 2. $y = \sin^3 2x$

_____ 3. $y = xe^{\cos x}$

_____ 4. $y = \sin^{-1}(x^3)$

_____ 5. $y = \sin(\ln(x^3))$

_____ 6. $y = \ln(x^2 - 5)$

_____ 7. $y = 5$

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

_____ 9. $y = 3x^{-1} + 12x$

_____ 10. $y = e^{\arcsin(x)}$

_____ 11. $y = \tan^{-1}(\ln x)$

_____ 12. $y = \sec^2(3x)$

_____ 13. $y = \cot x$

_____ 14. $y = x \cos\left(\frac{1}{x}\right)$

_____ 15. $y = (e^2)^x$

_____ 16. $y = e^{3x}$

_____ 17. $y = e^e$

_____ 18. $y = \frac{x^2}{e^{2x}}$

_____ 19. $y = \ln(x) \sin(x)$

_____ 20. $y = \ln(\sin(x))$

_____ 21. $y = \tan^5(\ln(3x^2 + 3) + 8x)$

_____ 22. $y = x^\pi$

_____ 23. $y = \pi^x$

_____ 24. $y = \pi^\pi$

_____ 25. $y = x^x$

_____ 26. $y = \frac{\sin(3x)}{\sqrt{x^2 - 5}}$

_____ 27. $y = \cot^{-1}\left(\frac{1}{1+x^2}\right)$

_____ 28. $y = 3x^2 - \cos^{-1}x$