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<u>Calculus Worksheet: Differentiation of Functions (1)</u>

Use differentiation rules to find *dy /dx* for each function given below

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

2. $y = \sqrt[5]{\dfrac{x^2+1}{1-x^3}}$

3. $y = \arcsin\left(\dfrac{x^2}{x^2+1}\right)$

4. $y = x^{\sin x} \quad , \; x > 0$

5. $y = \dfrac{\ln(x+1)}{\ln(x-3)}$

6. $y = \ln(\ln(x))$

7. $y = \arctan\left(\dfrac{x+2}{x-3}\right)$

8. $y = \sin(\cos(x+2))$