

Calculus **Gate Exam** for Derivatives (version 0) Remember, in order to pass this test,
ALL TEN PROBLEMS MUST BE DONE ENTIRELY CORRECTLY
For each of the following, find y'

1. $y = \frac{\ln[\csc^2(x)]}{\sqrt{3}}$

6. $y = \frac{x^4}{8^x}$

2. $y = \sin^{-1}(\sqrt{x})$

7. $y = 4 \ln\left(\frac{1}{x^9}\right) - \frac{1}{x^2}$

3. $y = \frac{\cos x}{e^{3x} + x^4} + 11x^3$

8. $y = \tan^{-1}\left(\frac{1}{x^5}\right) - \log_7(x^4 + 3x^2 - 11)$

4. $y = x^3 \cot x - \tan(3x)$

9. $y = \frac{8x-1}{6x+1}$

5. $x^2 y^3 + x \cdot \sin y = y^4$

10. $y = 2xe^{\sec x} - \frac{32}{x}$