Progressive Education Society's
Modern College of Arts, Science and Commerce (Autonomous),
Shivajinagar, Pune - 5

Department of Mathematics
FYBSc(Semester I)19ScMatU103

Based on Differential Calculus
Subject : Mathematics Practical-I (19ScMatU103)
Practical Incharge: Rima Ahuja
Practical 11:Successive Differentiation

1. If $y = \dfrac{16x + 18}{2x^2 + 5x + 3}$ then find y_n.

2. Find 7th derivative of $2\sin^2 x - 3\cos^2 x$.

3. Find y_{10}, if $y = \dfrac{x^2 + 4}{x^2 - 4}$

4. Let $y = (sin^{-1}x)^2$, Prove that $(1 - x^2)\, y_{n+2} - (2x + 1)x\, y_{n+1} - n^2\, y_n = 0$

5. Let $y = \log[x + \sqrt{1 + x^2}]$, Prove that $(1 + x^2)\, y_{n+2} + (2x + 1)x\, y_{n+1} + n^2\, y_n = 0$