Answer any one   :-

1. Evaluate $\int_0^{\pi/2} \frac{sin^2 x}{\sin x + \cos x}\, dx$.

2. Integrate the function $\frac{(\sqrt{x} + \sqrt[3]{x^2})^2}{x}$.

3. Find all asymptotes of $x^3 - 2x^2 y + xy^2 + x^2 - xy + 2 = 0$