Pencils and Erasers Only – No Calculators Allowed.

1. Solve the differential equation \( y' = -\frac{2}{x}y + \frac{\cos(x)}{x^2} \).

2. Solve the initial-value problem \( y' = -\frac{2}{x}y + \frac{\cos(x)}{x^2} \) with \( y(\pi/6) = 36/\pi^2 \).