Name: ID: Serial:

A- Find the arc length function for the curve $y = \sin^{-1} x$ with starting point $(0, 1)$.

B- Find the length of the arc of the curve $x^2 = (y - 4)^3$ from point $(1, 5)$ to point $(8, 8)$.

C- Find the area of the surface obtained by rotating the curve $y = \frac{x^3}{6} + \frac{1}{2x}$ for $\frac{1}{2} \leq x \leq 1$ about the x-axis.

D- The ellipse $\frac{x^2}{4} + \frac{y^2}{9} = 1$ is rotated about the line $x = 0$. Find the surface area of the obtained solid.