

Arc Length and Surface Area Worksheet

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1 Exercises

- I. Find the arc length of the curve $y = x^{3/2}$ from $(1, 1)$ to $(2, 2\sqrt{2})$.
- II. Find the arc length of the curve $y = \ln(\cos(x))$ from $x = 0$ to $x = \pi/4$.
- III. Find the surface area of the surface of revolution formed by taking the curve $y = x^3$ over $[0, 1]$ and revolving it about the x -axis.
- IV. Find the surface area of the surface of revolution formed by taking the curve $y = x^2$ over $[1, 2]$ and revolving it about the y -axis.