

**Instructions:** Show Your Work!

1. (6 pts) Find the arc length function for the curve

$$y = \sin^{-1}(x) + \sqrt{1 - x^2}$$

with starting point  $(0, 1)$ .

2. (4 pts) Write the integral (DO NOT EVALUATE) that gives the area of the surface resulting from rotating the curve

$$y = x \ln x, \quad 1 \leq x \leq 2$$

about x-axis.

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**Instructions:** Show Your Work!

1. (6 pts) Find the arc length function for the curve

$$y = \cos^{-1}(x) + \sqrt{1 - x^2}$$

with starting point (1, 1).

2. (4 pts) Write the integral (DO NOT EVALUATE) that gives the area of the surface resulting from rotating the curve

$$y = x + \sqrt{x}, \quad 1 \leq x \leq 2$$

about x-axis.