

Instructions: Show Your Work!

1. (6 pts) Evaluate the following integrals

(a)

$$\int_0^{3\pi/2} |\sin(x)| dx,$$

(b)

$$\int \frac{dx}{\sin^2(x)\sqrt{1 + \cot x}},$$

2. (4 pts) Set up (**DO NOT EVALUATE**) the integral that gives the volume of the solid obtained by rotating the region bounded by the curves

$$y = 2\sqrt{2} x^2, \quad x = y^2,$$

about the line $x = 2$.

Instructions: Show Your Work!

1. (6 pts) Evaluate the following integrals

(a)

$$\int_0^{3\pi/2} |\cos(x)| dx,$$

(b)

$$\int \frac{dx}{\cos^2(x)\sqrt{1+\tan x}},$$

2. (4 pts) Set up (**DO NOT EVALUATE**) the integral that gives the volume of the solid obtained by rotating the region bounded by the curves

$$y = 3\sqrt{3}x^2, \quad x = y^2,$$

about the line $x = 3$.