

Mini-test for Ch 8.1, 8.2

Math 104, Spring 2009

You must show your work. No credit is given if no supporting work is shown. No partial credit is given.

1. Integrate

$$\int_0^{\pi^3} \sin(\sqrt[3]{x}) dx.$$

- A.) $2\pi - 3$ B.) $3\pi - 6$ C.) $2\pi^2 - 9$ D.) $3\pi^2 - 12$ E.) $2\sqrt[3]{\pi} - 1$ F.) $3\sqrt[3]{\pi} + 1$

2. Integrate,

$$\int_0^{\sqrt[3]{\pi}} x^2 \sin^2(x^3) dx.$$

- A.) $\frac{1}{6}\pi$ B.) π C.) 6π D.) $\frac{1}{2}\sqrt{2}$ E.) $\frac{1}{2}\sqrt{3}$ F.) 1

3. Integrate

$$\int_0^{\pi/4} \frac{\sec x \tan x}{1 + \sec^2 x} dx.$$

- A.) 0 B.) $\frac{1}{4}\pi$ C.) $\sqrt{1 - \frac{1}{16}\pi^2} - 1$ D.) $\frac{1}{12}\pi$ E.) $\tan^{-1} \sqrt{2} - \frac{1}{4}\pi$ F.) $\tan^{-1} (\frac{1}{2}\sqrt{2})$