

Homework questions for sections 8.1, 8.2*Math 104, Fall 2007*

Credit is given only if supporting work is shown. Only correct answers receive credit. No partial credit is given.

1. Evaluate the integral

$$\int_0^{1/4} \sin^{-1}(2x) dx.$$

- A.) $\frac{1}{24}\pi + \frac{1}{4}\sqrt{3} - \frac{1}{2}$ B.) $\frac{1}{12}\pi + \frac{1}{8}\sqrt{3}$ C.) $\frac{1}{2}\pi + \frac{1}{2}\sqrt{3} - \frac{1}{4}$
D.) $\frac{2}{3}\pi + \sqrt{3} - 1$ E.) $\frac{1}{6}\pi + \frac{1}{3}\sqrt{3} - \frac{1}{8}$ F.) $\frac{1}{12}\pi + \frac{1}{4}\sqrt{3} - \frac{1}{4}$

2. Evaluate the integral

$$\int_0^{\pi/2} \sin^2(x) \sin(2x) dx.$$

- A.) 0 B.) $\frac{1}{4}$ C.) $\frac{1}{3}$ D.) $\frac{1}{2}$ E.) $\frac{2}{3}$ F.) 1

3. Evaluate the integral

$$\int_{-\pi/12}^{\pi/12} \frac{\tan^2 3x}{\cos^4 3x} dx.$$

- A.) $\frac{1}{3}$ B.) $\frac{16}{45}$ C.) $\frac{17}{45}$ D.) $\frac{2}{5}$ E.) $\frac{19}{45}$ F.) $\frac{4}{9}$