Multiple choice questions for sections 8.2, 8.3 *Math 104, Spring 08*

Show your work. No partial credit is given, but a correct guess without supporting work also receives no credit.

1. 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.) $\tan^{-1}(\frac{1}{2}\sqrt{2})$

2. Integrate,

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

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

$$\int_0^1 15x^3\sqrt{x^2+1}\,dx.$$

A.) $2\sqrt{2}+2$ B.) $6\sqrt{2}-3$ C.) $12\sqrt{2}-15$ D.) $2\sqrt{2}$ E.) $6\sqrt{2}$ F.) $12\sqrt{2}$