

**Homework questions for section 8.5***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

$$\int_{5/2}^{13/2} \frac{\sqrt{2x-1}}{2x+3} dx.$$

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

2. Evaluate the integral

$$\int_0^{1/2} x \sin^{-1} x \, dx.$$

- A)  $\frac{1}{16}\sqrt{3} + \frac{1}{48}\pi$       B)  $\frac{1}{16}\sqrt{3} - \frac{1}{48}\pi$       C)  $\frac{1}{32}\sqrt{3} + \frac{1}{16}\pi$   
D)  $\frac{1}{32}\sqrt{3} - \frac{1}{16}\pi$       E)  $\frac{1}{48}\sqrt{3} + \frac{1}{32}\pi$       F)  $\frac{1}{48}\sqrt{3} - \frac{1}{32}\pi$

3. Evaluate the integral

$$\int_0^2 6x\sqrt{9+4x^2} dx.$$

- A) 9      B) 16      C) 25      D) 36      E) 49      F) 64