MA 241 TEST # 1 Name: _____
May 24, 1999 SS #: _____
Show All Work Seat #: _____

Note: You can use any integration techniques to answer the questions. You need not to simplify the final expressions or numerics.

Evaluate the following integrals:

1. $\int \left(t\sqrt{t} + \frac{1}{t\sqrt{t}}\right)\, dt$
2. $\int 2^{3x}\, dx$
3. $\int_{1/4}^{1/2} \frac{dx}{\sqrt{x-x^2}}$ (*Hint: Complete the perfect square for* $x - x^2$ *and make a change of variable.*)
4. $\int \frac{e^x}{\sqrt{1-e^{2x}}}\, dx$
5. $\int_{-2}^{0} \frac{2x+4}{x^2-5x+6}\, dx$
6. $\int_{-\pi/4}^{\pi/4} \cos\theta \sin^3\theta\, d\theta$ (*Hint: use substitution* $u = \cos\theta$ *and trigonometric identity.*)
7. $\int x(\ln x)^4\, dx$
8. $\int te^{5t}\, dt$
9. $\int \sin^2\theta\, d\theta$
10. $\int_0^1 \arcsin z\, dz$