NAME _____ Rec. Instr._____

Signature _____ Rec. Time_____

ANALYTIC GEOMETRY AND CALCULUS II
EXAM II
March 17, 1998

Show all work for full credit. You may use a calculator, but no books or notes.

	1	2	3	4	5	total
points per page						

(17) 1. (a) Evaluate $\displaystyle\int \frac{x}{\sqrt{4-x^2}}\,dx\,.$

(b) Rewrite the improper integral $\displaystyle\int_{-2}^{2} \frac{x}{\sqrt{4-x^2}}\,dx$ using limits, and evaluate.

(22) 2. Evaluate the integrals.

(a) $\displaystyle\int x^2 \sin(2x)\, dx$

(b) $\displaystyle\int \sin^2(x) \cos^3(x)\, dx$

(22) 3. Evaluate the integrals.

(a) $\displaystyle\int \frac{x+1}{x^3 - x^2}\, dx$

(b) $\displaystyle\int \frac{\sqrt{x}}{1+x}\, dx$

(11) 4. Evaluate the integral. $$\int \frac{x^2}{(x^2+1)^{5/2}}\,dx$$

(11) 5. Using the tables on the last page of the exam, evaluate the integral. Specify which formula you are using.

$$\int \frac{dx}{e^x\sqrt{16-e^{2x}}}$$

(17) 6. Consider the set of points $P = (x, y)$ such that the distance from P to the point (0,3) is twice the distance from P to the point (3,0).

Show that this set of points is a circle, and find the center and radius of the circle.