Math 138A
Winter 2004
R. Schultz

TAKE HOME FINAL EXAMINATION

This will be due **Wednesday, March 17, 2004,** by 4:45 P.M. Please leave copies in my mailbox in the Surge Building or ask someone from the office staff to do so.

This take home examination will substitute for both a second midterm examination and a final examination. The revised grading policy is that the midterm examination will count for 35 per cent of the grade, the take home examination will count for 50 per cent of the grade, and as the homework will count for the remaining fivteen per cent.

The assignment itself is to **work any TEN of the following:**

Additional exercises for III.1: 1*ac*, 2

Additional exercises for III.3: 0, 3*cd* (you may use the results from the immediately preceding exercises)

Additional exercises for III.5: 2 (just set up the integral)

Additional exercises for III.6: 1, 2 (last sentence only)

Additional exercises for IV.2: 1

do Carmo, § 3.2, pp. 151–153: 2, 4, 8*a*

do Carmo, § 3.3, pp. 168–174: 5*abc*, 13

Additional exercises for IV.4: 1 (only the mean curvature for the hyperbolic paraboloid, the Gaussian curvature for the ellpitic paraboloid, and for the Möbius strip find the Gaussiian curvature and the points on the unit circle in the xy-plane defined by $z = 0$ and $x^2 + y^2 = 1$ where the mean curvature is nonzero — since the Möbius strip is not orientable it is only meaningful to discuss the absolute value of the mean curvature, which can be computed locally using any given local orientation), **AND ALSO** 2–4 (hints will probably be given for 3)