

Math 103.01 Summer 2001
Sample Test #2

1. (10 points) Page 883 #41

2. (15 points) Find the maximum and minimum values of $f(x, y, z) = x^2 - yz$ subject to $x^2 + y^2 + z^2 \leq 1$. (Compare to Page 883 #39.)

3. (60 points) Solve any five of the following problems:

- Page 955 #6
- Page 955 #7
- Page 955 #8
- Page 955 #11
- Page 955 #12
- Page 955 #13
- Page 955 #14
- Page 955 #15

4. (15 points) Suppose that a (six-sided) rectangular box is to be constructed so that its total edge length is 200 cm. Find the maximum volume possible for such a box. (This came close to making it onto the actual test.)