TECHNICAL CALCULUS I

Fall 1994

Exam 3

Name _____

1. Find the two numbers whose sum is 40 and whose product is maximum.

2. Sketch the graph of the function $y = x^3 + \dfrac{3}{x}$ by going through the procedure described in the class.

3. A machine part is a circular sector of radius r and angle θ. Find r and θ if the area is 1 and the perimeter is a minimum.

4. An alpha particle moves along the path $y = x^2 - 4$. Determine the closest the particle comes to the origin.

5. The curves $y = x^2 + 2$ and $y = 4x - x^2$ are tangent to each other. Find the point of tangency and the equation of the tangent line.