University of Lethbridge
Department of Mathematics and Computer Science
MATH 1565 - Tutorial #10

Print your name and student number clearly in the space above.

Complete the problems on the back of this page to the best of your ability. If there is a problem you especially desire feedback on, please indicate this.

It is recommended that you work out the details on scrap paper before writing your solutions on this page.

[5] 1. A water container in the shape of an inverted cylindrical cone is being filled with water at a rate of 10 ml per minute. If the height of the cone is 12 cm and the base radius is 4 cm, at what rate is the level of water rising when the water is 3 cm deep?

2. A piece of wire 10 cm long is cut into two pieces. The first piece is bent into a square, and the second into a circle. At what point (if any) should the wire be cut so that the combined area of the square and circle is a minimum? At what point (if any) should it be cut so that
[5] the area is a maximum?