

Summer 2014 MATLAB Assignment 6

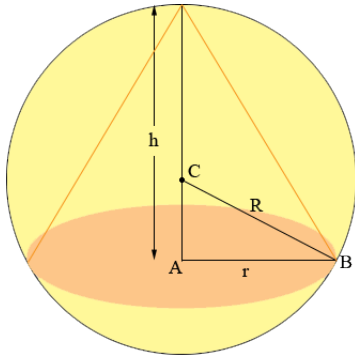
Work the following problems (NOTE: these are RELATED TO the corresponding page and problem number from Gilat. Do NOT work the actual problems from the Lab Manual, or you will receive NO CREDIT!)

1. **g313x03** (solutions to equations: pp295-298):

Determine the three positive roots of the equation: $e^{-0.2x} \cos(2x) = 0.15x^2 - 1$.

2. **g315x12** (minima/maxima: pp298-299):

Determine the dimensions (radius r and height h) and the volume of the cone with the largest volume that can be made inside of a sphere with a radius of $R = 17 \text{ cm}$.



3. **g317x23** (integration: pp300-302):

Using the information in the problem, determine the change in the potential energy of a satellite with a mass of 800 kg that is raised from the surface of the earth to a height of 500 km.