

## CHEN.3170 Applied Engineering Problem Solving

### *A Short Quiz on*

### *Function Evaluation and Plotting in Matlab*

The total surface area and volume of a right circular cone of height  $H$  and base radius  $R$  are given by

$$A = \pi R^2 + \pi R \sqrt{H^2 + R^2} \quad \text{and} \quad V = \pi R^2 H / 3$$

If  $H = 100$  cm, write a complete Matlab script file to evaluate and plot  $A(R)$  and  $V(R)$  vs.  $R$  over the range  $50 \leq R \leq 200$  cm using either scalar or vector arithmetic (your choice). Since  $A$  and  $V$  have different units, put them in separate properly labeled subplots within a  $2 \times 1$  format on the same page.