

- 1) (3 pts) Write a program that will compute the volume of a sphere given the radius. Test your program using $r = 1.45$.
- 2) (3 pts) Write a program that will compute the volume of a right circular cone given the radius and height. Test your program using values of $r = 0.3$ and $h = 4.2$.
- 3) (4 pts) Run the program from Problem 2, but use values of $r = \frac{3}{7}$ and $h = \frac{11}{3}$ (NOTE: The program needs to give the correct value for the volume). Why is this particular set of input values difficult to use?
- 4) (3 pts) A rock that is dropped from a 100m high building has a height above the ground given by

$$h = 100 - 4.91 t^2.$$

where t is the elapsed time. Write a program that will determine the height given the value of t . Test your program for $t = 0.5$ and $t = 1.5$. Does this problem make sense physically for every positive value of t ?