

Homework Assignment

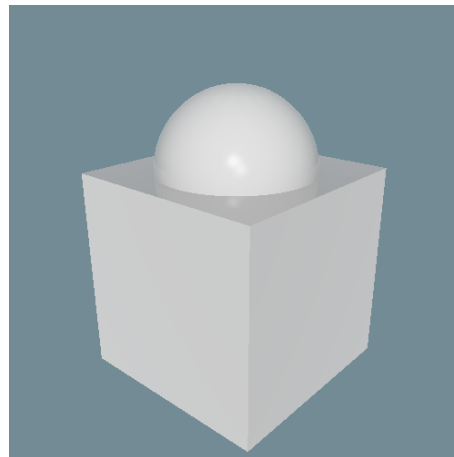
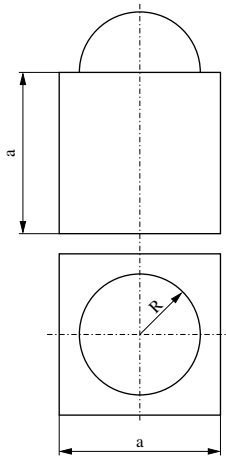
Prepare a report on the following problem:

A solid shown in figure below consists in a cube and a hemisphere. Given that the edge length of the cube "a" and the hemisphere radius "R" change according to the formulae:

$$a(t) = 3 + 0.3t^2 ,$$

$$R(t) = 0.1t^2 + \sin(4t)$$

draw the function of the solid volume $V(t)$ and solid surface $S(t)$ for the parameter $t \in [1, 3\pi]$.



The report should contain (at least):

- Author's name, matric. card number.
- The formulae for $V(t)$ and $S(t)$.
- The graphs of the functions $V(t)$ and $S(t)$.
- The source code of all Octave scripts used for preparing the report.

Important

- Reports should be prepared as PDF files and sent by e-mail to the respective tutor.
- For grading information, hints and additional materials please visit <http://www.15.pk.edu.pl/~putanowr/iten>.