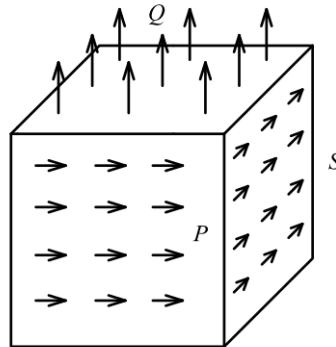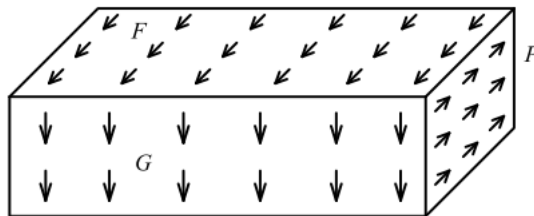**Task 1. Set up boundary conditions for stress tensor components on the visible parts of the body surface**

1. Cartesian coordinates
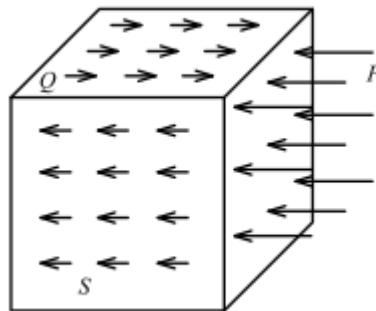
Problem 1.1.1
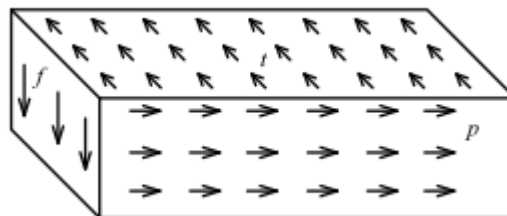

Problem 1.1.2
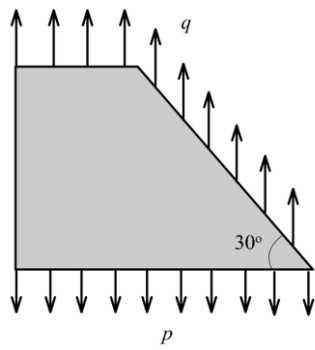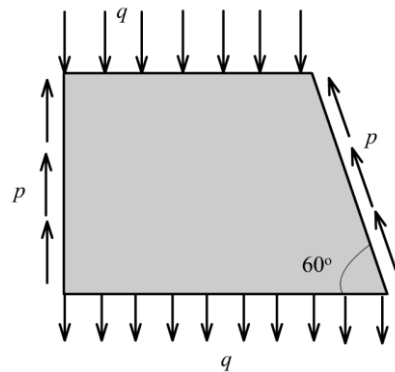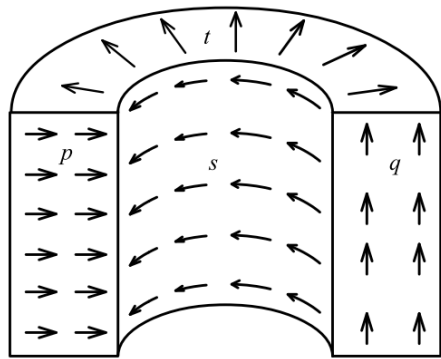

Problem 1.1.3

Problem 1.1.4

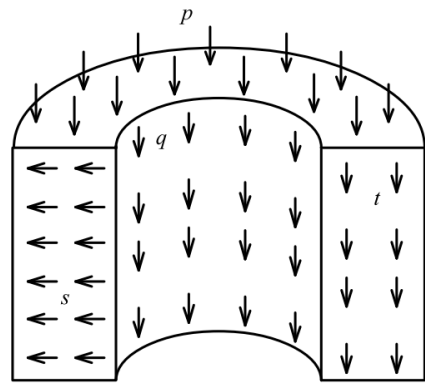Problem 1.1.5
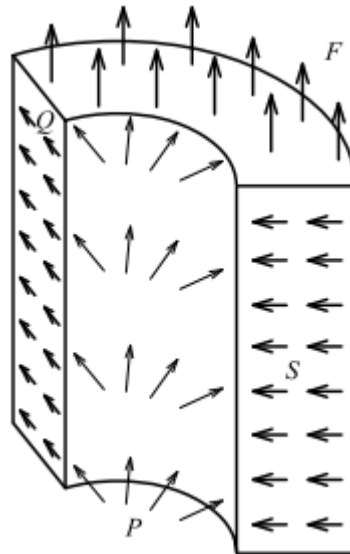

Problem 1.1.6
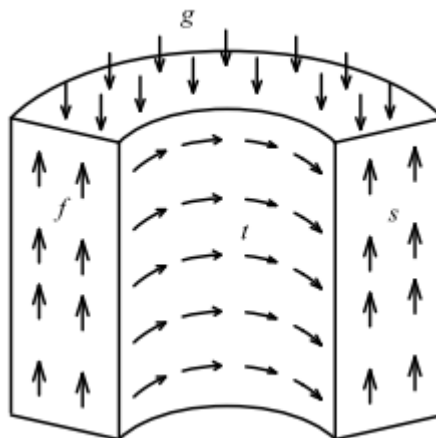

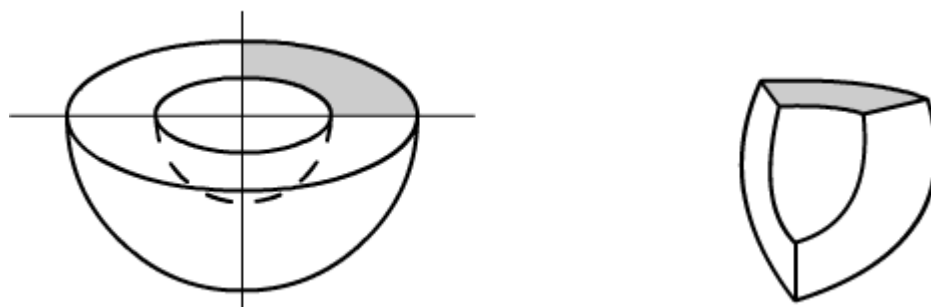## 2. Cylindrical coordinates

Problem 1.2.1
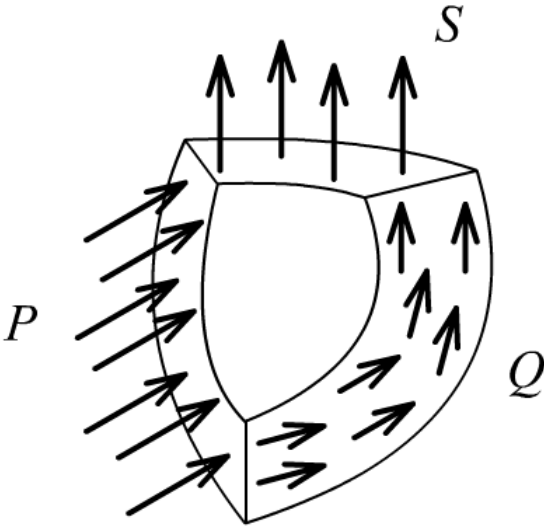

Problem 1.2.2

Problem 1.2.3
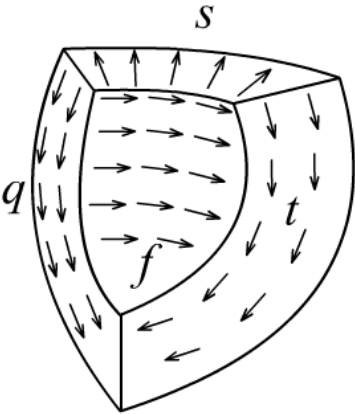

Problem 1.2.4

3. Spherical coordinates

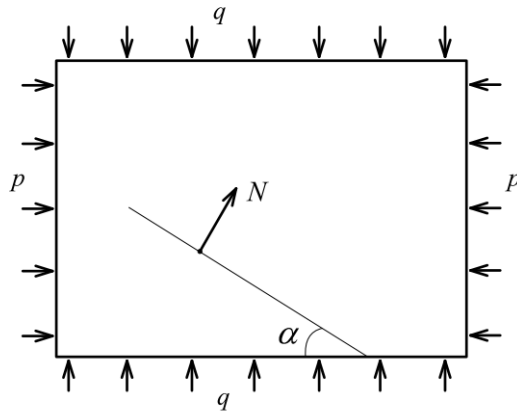The body is one eighth part of the thick spherical shell
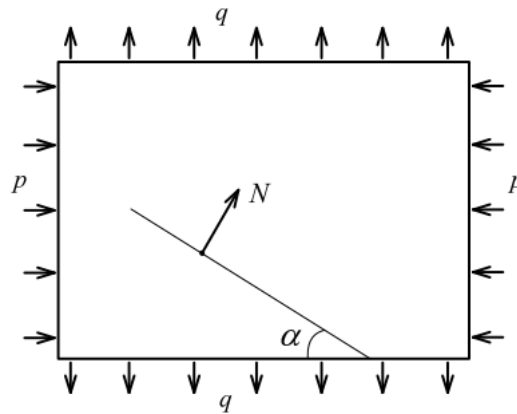
Problem 1.3.1

Problem 1.3.2

Task 2. For given relation between q and p find normal and shear stresses in the given point on the surface with unit normal N inclined with the angle α with respect to horizontal plane

Problem 2.1. $q=2p$, $\alpha=30°$

q

p N α p

q

Problem 2.2. $q=3p$, $\alpha=30°$

q

p N α p

q

Problem 2.3. $q=3p$, $\alpha=45°$

q

p N α p

q