

PHYS 401: Electricity & Magnetism I  
Due date: Wednesday, February 22, 2023

**Problem set #4**

**1) Problem 1.62**

**2) Problem 2.12**

**3) Problem 2.16**

**4) Problem 2.18**

**5) Problem 2.26**

**6) Two spheres**

Consider a sphere of radius  $2a$  whose volume has a uniform charge density  $\rho$ . A spherical cavity of radius  $a$  is removed from the sphere, as shown in the figure. Calculate the electric field (vector) within the cavity.

