

**Problem 2.35** A metal sphere of radius  $R$ , carrying charge  $q$ , is surrounded by a thick concentric metal shell (inner radius  $a$ , outer radius  $b$ , as in Fig. 2.48). The shell carries no net charge.

(a) Find the surface charge density  $\sigma$  at  $R$ , at  $a$ , and at  $b$ .

(b) Find the potential at the center, using infinity as the reference point.



Figure 2.48

**Problem 3.6** Find the force on the charge  $+q$  in Fig. 3.14. (The  $xy$  plane is a grounded conductor.)

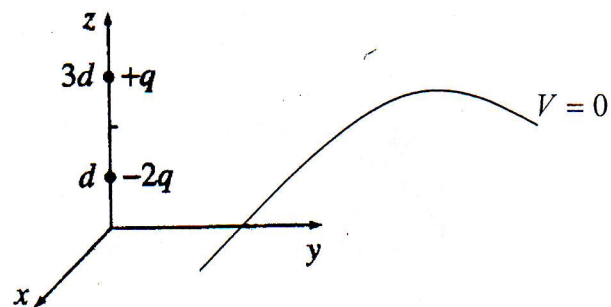


Figure 3.14