6 A solid metal sphere of radius R is isolated in space. The sphere is positively charged so that the electric potential at its surface is V_S. The electric field strength at the surface is E_S.

(a) On the axes of Fig. 6.1, show the variation of the electric potential with distance x from the centre of the sphere for values of x from $x = 0$ to $x = 3R$.
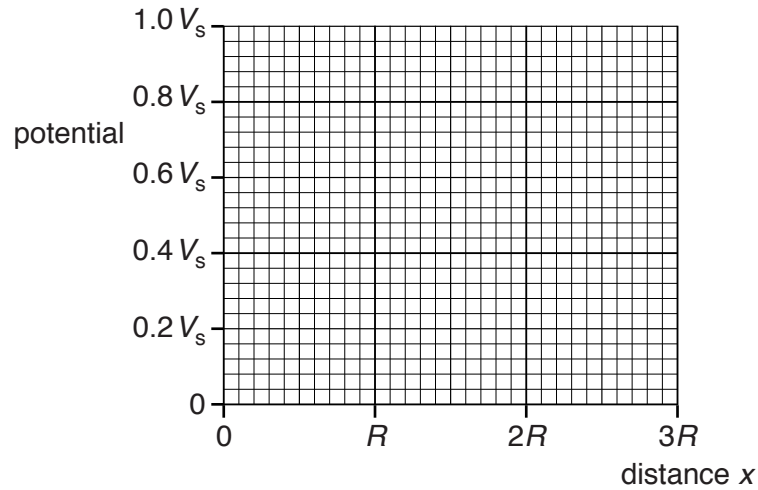

Fig. 6.1

[3]

(b) On the axes of Fig. 6.2, show the variation of the electric field strength with distance x from the centre of the sphere for values of x from $x = 0$ to $x = 3R$.
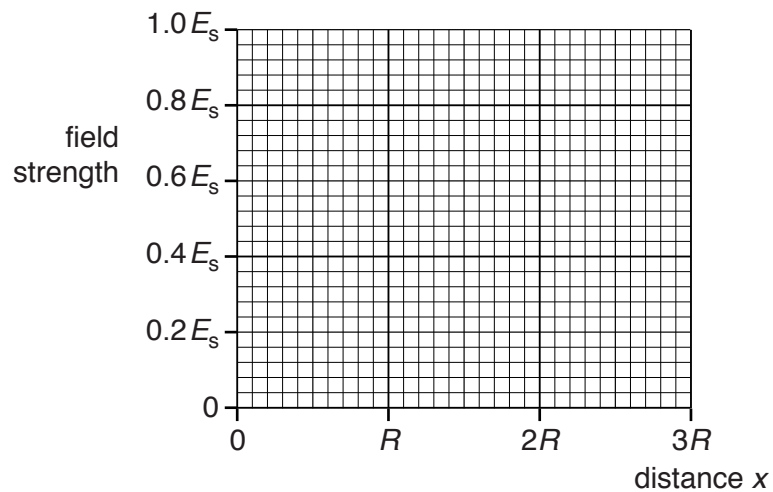

Fig. 6.2

[3]

[Total: 6]