A small ball B is projected from a point O which is h m above a horizontal plane. At time 2 s after projection B has speed $18\,\mathrm{m\,s^{-1}}$ and is moving in the direction 30° above the horizontal.

(i) Find the initial speed and the angle of projection of B. [4]

B has speed $38\,\mathrm{m\,s^{-1}}$ immediately before it strikes the plane.

(ii) Calculate h. [2]

B bounces when it strikes the plane, and leaves the plane with speed $20\,\mathrm{m\,s^{-1}}$ but with its horizontal component of velocity unchanged.

(iii) Find the total time which elapses between the initial projection of B and the instant when it strikes the plane for the second time. [5]