A particle P of mass 0.7 kg is attached by a light elastic string to a fixed point O on a smooth plane inclined at an angle of 30° to the horizontal. The natural length of the string is 0.5 m and the modulus of elasticity is 20 N. The particle P is projected up the line of greatest slope through O from a point A below the level of O. The initial kinetic energy of P is 1.8 J and the initial elastic potential energy in the string is also 1.8 J.

(i) Find the distance OA. [2]

(ii) Find the greatest speed of P in the motion. [6]