A particle P is projected from a point O on horizontal ground with speed u at an angle θ above the horizontal, where $\tan\theta = \frac{1}{3}$. The particle P moves freely under gravity and passes through the point with coordinates $(3a, \frac{4}{5}a)$ relative to horizontal and vertical axes through O in the plane of the motion.

(a) Use the equation of the trajectory to show that $u^2 = 25ag$. [2]

At the instant when P is moving horizontally, a particle Q is projected from O with speed V at an angle α above the horizontal. The particles P and Q reach the ground at the same point and at the same time.

(b) Express V^2 in the form kag, where k is a rational number. [6]