

15 A projectile is launched from a point on level ground with an initial velocity u at an angle θ above the horizontal.

(a) Show that the range of the projectile is given by $\frac{2u^2 \sin \theta \cos \theta}{g}$. **[3]**

(b) Determine the set of values of θ for which the maximum height of the projectile is greater than the range, where θ is an acute angle. Give your answer in degrees. **[5]**