

- 3** At time $t = 0$ seconds, a particle P is projected with speed $u \text{ m s}^{-1}$ at an angle 60° above the horizontal from a point O . In the subsequent motion P moves freely under gravity. The direction of motion of P when $t = 5$ is perpendicular to its direction of motion when $t = 15$.

Find the value of u .

[5]

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.