

- 2 The points A and B are at the same horizontal level a distance $4a$ apart. The ends of a light elastic string, of natural length $4a$ and modulus of elasticity λ , are attached to A and B . A particle P of mass m is attached to the midpoint of the string. The system is in equilibrium with P at a distance $\frac{3}{2}a$ below M , the midpoint of AB .

(a) Find λ in terms of m and g .

[3]

This image shows a full page of a handwriting practice worksheet. It consists of multiple rows of horizontal dotted lines spaced evenly down the page, providing a guide for letter height and placement. The background is plain white, and there are no other markings or text present.

The particle P is pulled down vertically and released from rest at a distance $\frac{8}{3}a$ below M .

- (b)** Find, in terms of a and g , the speed of P as it passes through M in the subsequent motion. [4]

[illegible]