



A uniform lamina is in the form of an isosceles triangle ABC in which $AC = 2a$ and angle $ABC = 90^\circ$. The point D on AB is such that the ratio $DB:AB = 1:k$. The point E on CB is such that DE is parallel to AC . The triangle DBE is removed from the lamina (see diagram).

- (a) Find, in terms of k , the distance of the centre of mass of the remaining lamina $ADEC$ from the midpoint of AC . [4]

[illegible]

When the lamina $ADEC$ is freely suspended from the vertex A , the edge AC makes an angle θ with the downward vertical, where $\tan \theta = \frac{5}{18}$.

(b) Find the value of k .

[3]

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