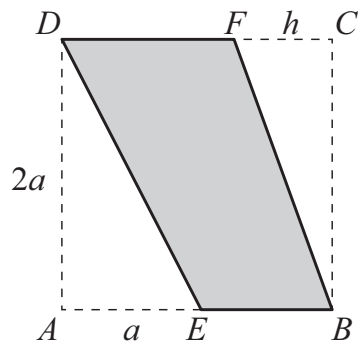




The lamina $BFDE$ is obtained by removing triangles AED and BCF from a uniform square lamina $ABCD$ of side $2a$. The length of side AE is a and the length of side FC is h (see diagram). The centre of mass of $BFDE$ is at a distance $\bar{x}$ from AD , and at a distance $\bar{y}$ from AB .

- (a) Show that $\bar{x} = \frac{h^2 - 6ah + 11a^2}{3(3a - h)}$ and find a corresponding expression for $\bar{y}$. [5]

1

(b)

Find, in terms of a , the set of possible values of h for which the lamina remains in equilibrium. [2]

②