











4.

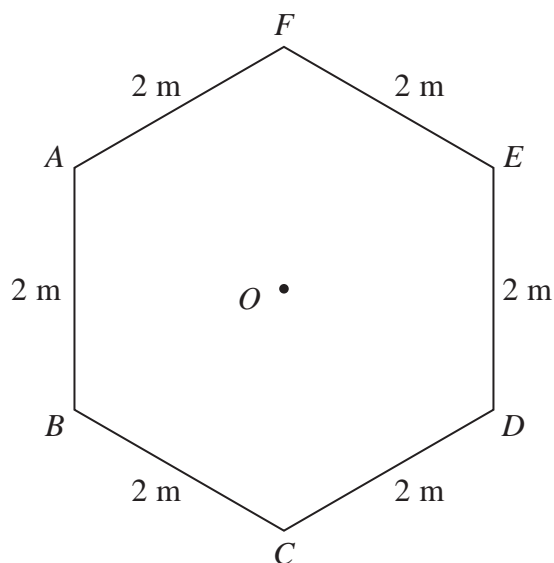


Figure 1

The uniform lamina  $ABCDEF$  is a regular hexagon with centre  $O$  and sides of length 2 m, as shown in Figure 1.

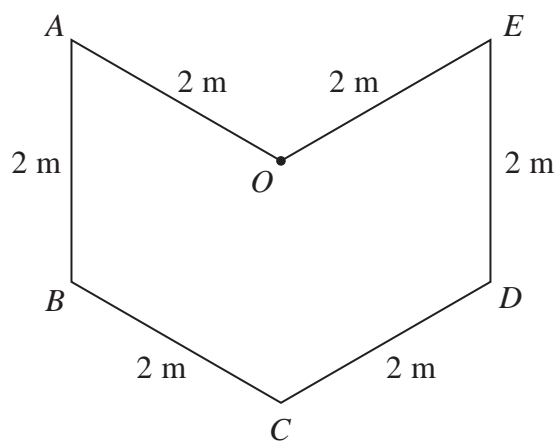


Figure 2

The triangles  $OAF$  and  $OEF$  are removed to form the uniform lamina  $OABCDE$ , shown in Figure 2.

(a) Find the distance of the centre of mass of  $OABCDE$  from  $O$ . (5)

The lamina  $OABCDE$  is freely suspended from  $E$  and hangs in equilibrium.

(b) Find the size of the angle between  $EO$  and the downward vertical. (6)



















