

- 6** The line with gradient -2 passing through the point $P(3t, 2t)$ intersects the x -axis at A and the y -axis at B .

(i) Find the area of triangle AOB in terms of t . [3]

The line through P perpendicular to AB intersects the x -axis at C .

(ii) Show that the mid-point of PC lies on the line $y = x$. [4]