## Question 1

Triangle $A B C$ is shown in the diagram below.
The coordinates of $B$ are $(3,0)$ and the coordinates of $C$ are $(9,-2)$.
The broken line is the perpendicular bisector of $B C$.

(a) Find the equation of the perpendicular bisector of BC .
(b) The line $A B$ makes an angle of $45^{\circ}$ with the positive direction of the $x$-axis. Find the equation of $A B$.
(c) Find the coordinates of the point of intersection of $A B$ and the perpendicular bisector of $B C$.

Answers:
(a) $y=3 x-19$
(b) $y=x-3$
(c) $(8,5)$

