



OAN , OMB and APB are straight lines.

$AN = 2OA$.

M is the midpoint of OB .

$\vec{OA} = \mathbf{a}$ $\vec{OB} = \mathbf{b}$

$\vec{AP} = k\vec{AB}$ where k is a scalar quantity.

Given that MPN is a straight line, find the value of k .

(Total for Question 21 is 5 marks)

TOTAL FOR PAPER IS 80 MARKS

