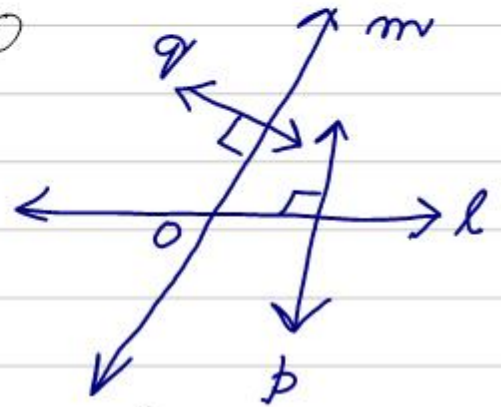


# ncert exemplar, ex 6.4, Page 3

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given  $l, m$  intersect at  $O$   
 $p \perp l, q \perp m$

to prove  $p$  and  $q$   
intersect each  
other.

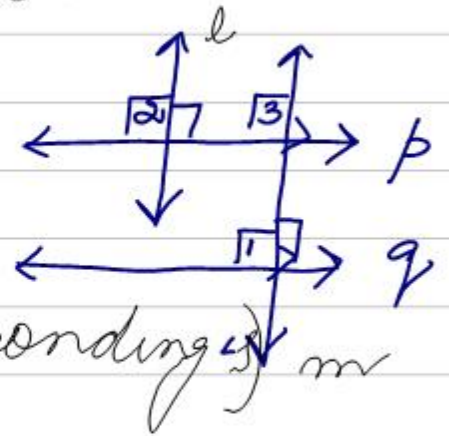


proof Suppose  $p$  and  $q$  do not  
intersect each other.

let  $p \parallel q$

$$\angle 1 = \angle 2 = 90^\circ \quad \left( \begin{array}{l} p \perp l \\ \dots \textcircled{i} \\ q \perp m \end{array} \right)$$

$$\angle 1 = \angle 3 = 90^\circ \quad \left( \begin{array}{l} \text{corresponding} \\ \dots \textcircled{ii} \\ \because p \parallel q \end{array} \right)$$



From  $\textcircled{i}$  and  $\textcircled{ii}$

$$\angle 2 = \angle 3$$

But these are corresponding  
angles

$\therefore l \parallel m$

but this is contradiction

$\therefore$  given  $l$  and  $m$  intersect.

Our supposition is wrong

$\therefore p, q$  intersect each other.

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