Exercise 5.2

1) How would you rewrite Euclid's fifth postulate so that it would be easier to understand?

Ans) Euclid's fifth postulate: If a straight line falling on two straight lines makes the interior angles on the same side of it taken together less than two right angles, then the two straight lines, if produced indefinitely, meet on that side on which the sum of angles is less than two right right angles.

i.e., the Euclid's fifth postulate is about parallel lines.

Parallel lines are the lines which do not intersect each other ever and are always at a constant perpendicular distance apart from each other. Parallel lines can be two or more lines.

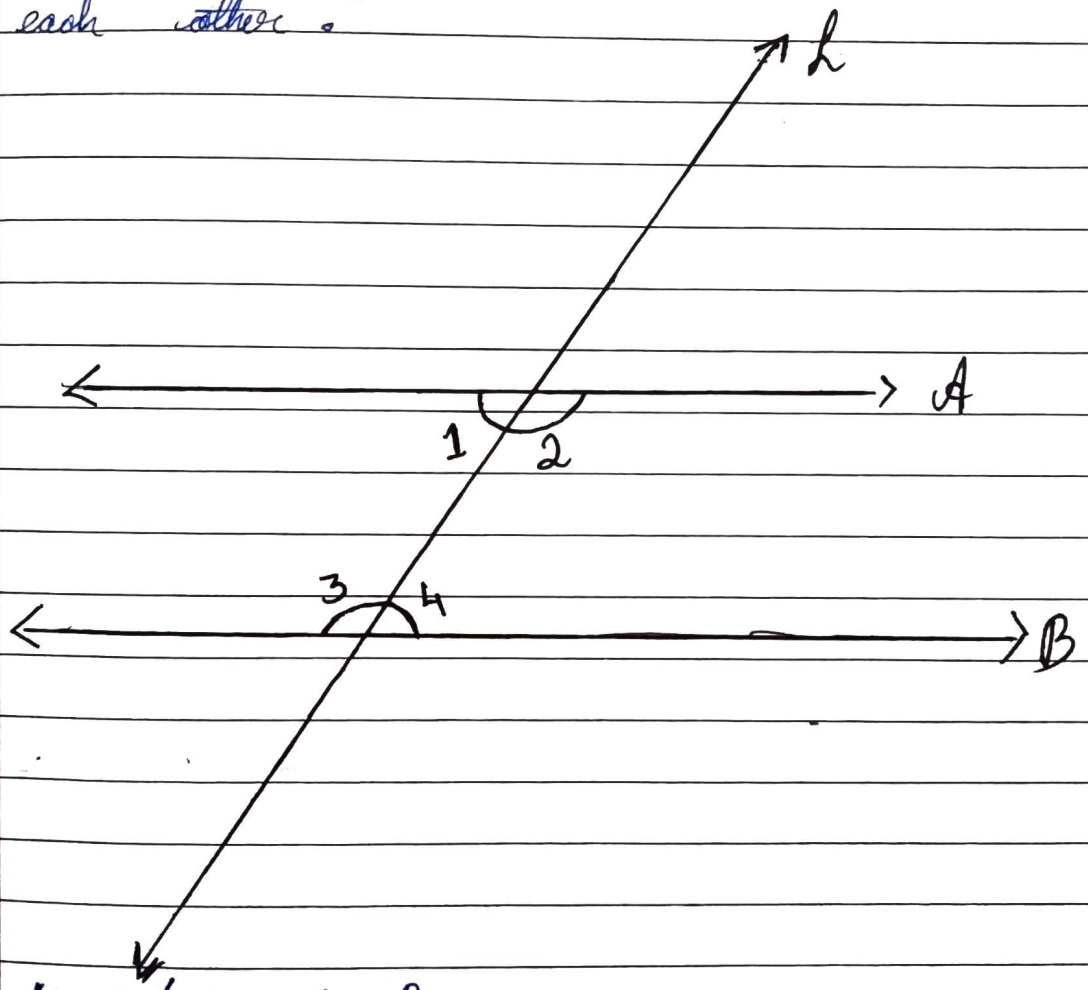
A:- If X does not lie on the line A then we can draw a line through x which will be parallel to that of the line A.

B:- There can be only one line that can be drawn through the point X which is parallel to the line A.

2) Does Euclid's ~~geometry~~ fifth postulate imply the existence of parallel lines? Explain?

ans) Yes, Euclid's fifth postulate does imply the existence of the parallel lines.

If the sum of the interior ~~right~~ angles is equal to the sum of the right angles, then the two lines will not meet each other at any given point, hence making them ~~parallel~~ parallel to each other.



$\angle 1 + \angle 3 = 180^\circ$

Or $\angle 3 + \angle 4 = 180^\circ$