5 INTRODUCTION TO EUCLID'S GEOMETRY

EXERCISE 5.2

- **Q.1.** How would you rewrite Euclid's fifth postulate so that it would be easier to understand?
- **Ans.** When two lines are cut by a third line, such that the sum of interior angles is less than 180° on one side then the first two lines intersect on the same side.
- **Q.2.** Does Euclid's fifth postulate imply the existence of parallel lines? Explain.
- **Ans.** It may be argued that Euclid's fifth postulate recognises the existence of parallel lines. If the sum of interior angles is 180° on both sides of the transversal then the lines will not intersect on any side (condition for intersection being that the sum of interior angles on that side should be less than 180°). So if two lines never intersect, then they are parallel.