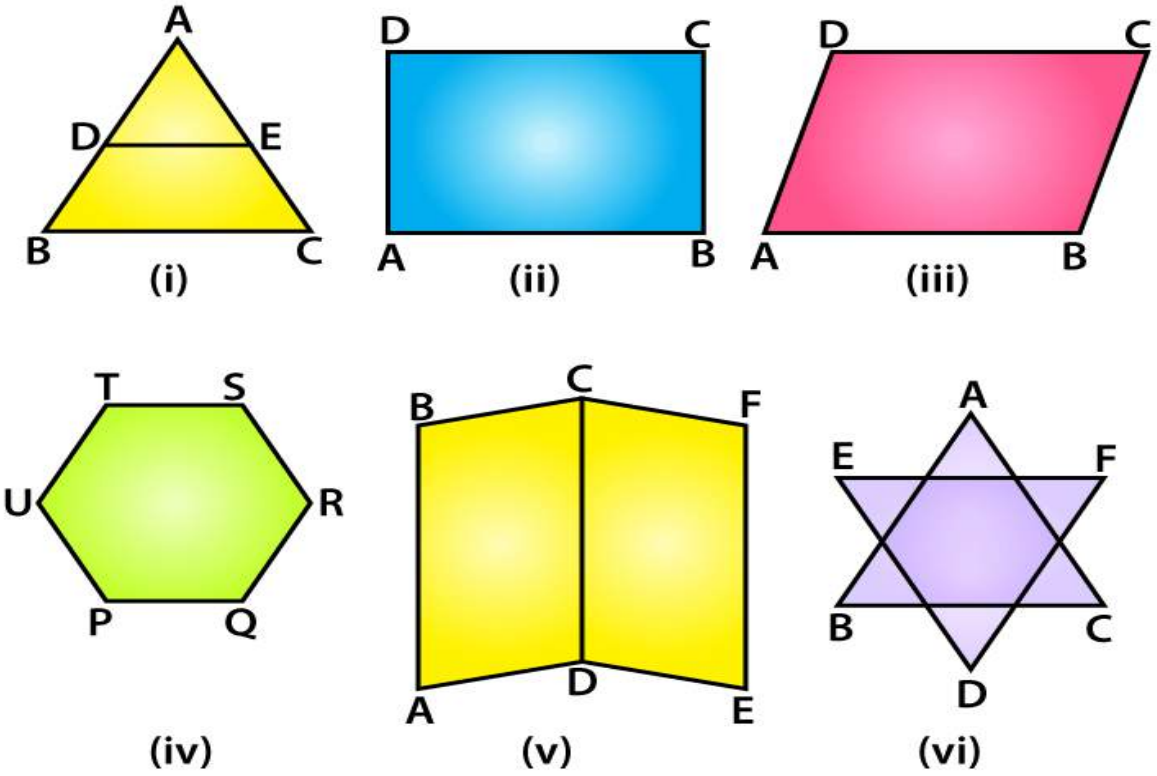
EXERCISE 15.1 PAGE: 15.2

1. Identify parallel line segments shown in Fig. 15.6.



Solution:

(i) From the figure we know that BC || DE.

(ii) From the figure we know that AB || DC, AD || BC.

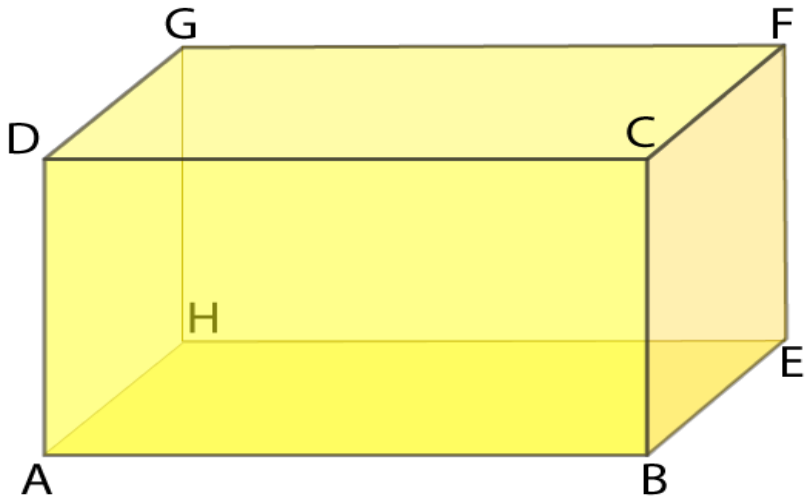
(iii) From the figure we know that AB || DC and AD || BC.

(iv) From the figure we know that PQ || TS, UT || QR and UP || SR.

(v) From the figure we know that AB || EF || CD, BC || AD and CF || DE.

(vi) From the figure we know that EF || BC, AB || DF and AC || DE.

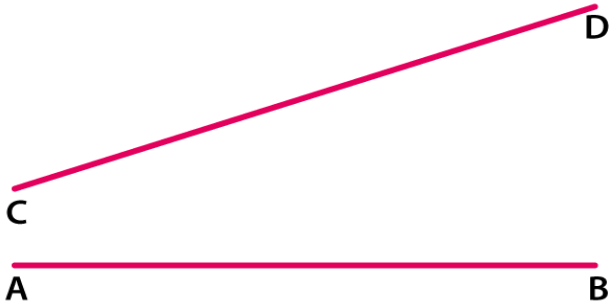
2. Name the pairs of all possible parallel edges of the pencil box whose figure is shown in Fig. 15.7.



Solution:

The pairs of all possible parallel edges of the pencil box are
AB || DC || HE || GF, AD || GH || BC || EF and AH || DG || BE || CF

3. In Fig. 15.8, do the segments AB and CD intersect? Are they parallel? Give reasons.



Solution:

No, AB and CD do not intersect but they can intersect if extended further. No AB and CD are not parallel since, the distance between them is not constant.

4. State which of the following statements are true (T) or which are false (F):
(i) If two lines in the same plane do not intersect, then they must be parallel.
(ii) Distance between two parallel lines is not same everywhere.
(iii) If m ⊥ l, n ⊥ l and m ≠ n, then m || n.
(iv) Two non-intersecting coplanar rays are parallel.
(v) If ray AB || m, then line segment AB || m.
(vi) If line AB || line m, then line segment AB || m.
(vii) No two parallel line segments intersect.
(viii) Every pair of lines is a pair of coplanar lines.
(ix) Two lines perpendicular to the same line are parallel.
(x) A line perpendicular to one of two parallel lines is perpendicular to the other.
Solution:

(i) True

(ii) False

(iii) True

(iv) False

(v) True

(vi) True

(vii) True

(viii) False

(ix) True

(x) True