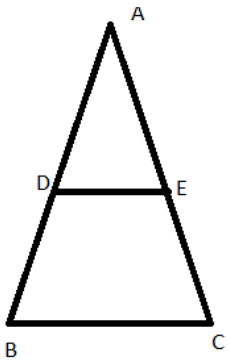
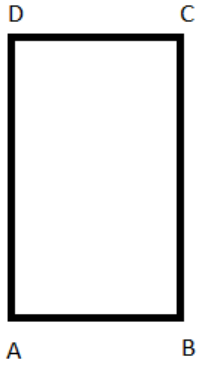
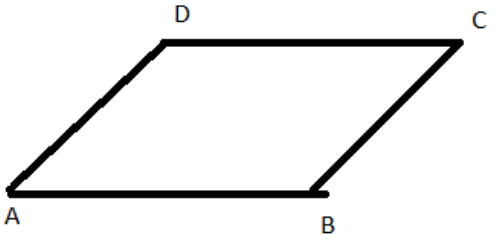
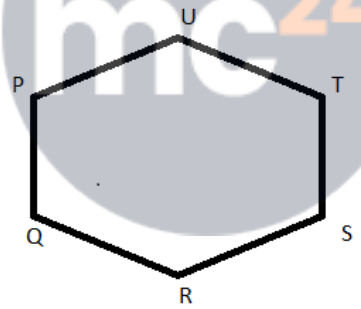
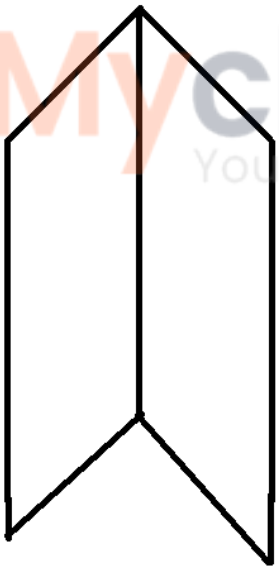
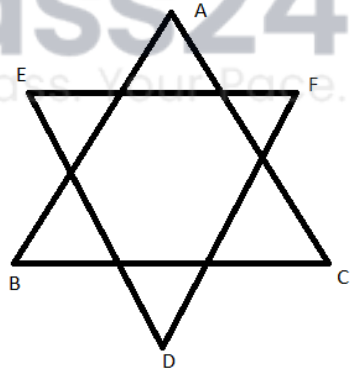
Pair of Lines and Transversal

Exercise 15.1

Question: 1

Identify parallel line segments:

		
(i)	(ii)	(iii)
		
(iv)	(v)	(vi)

Solution:

(i) BC ∥ DE

(ii) AB ∥ DC, AD ∥ BC

(iii) AB ∥ DC, AD ∥ BC

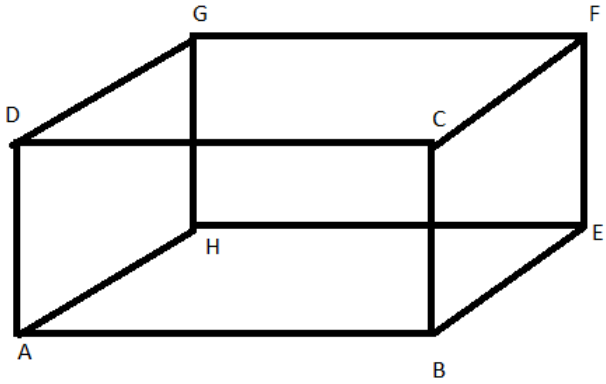
(iv) PQ ∥ TS, UT ∥ QR , UP ∥ SR

(v) AB ∥ DC ∥ EF, AD ∥ BC and DE ∥ CF

(vi) BC ∥ E, AB ∥ DF and AC ∥ DE

Question: 2

Name the pairs of all possible parallel edges of the pencil box whose figure is shown in the figure



Solution:

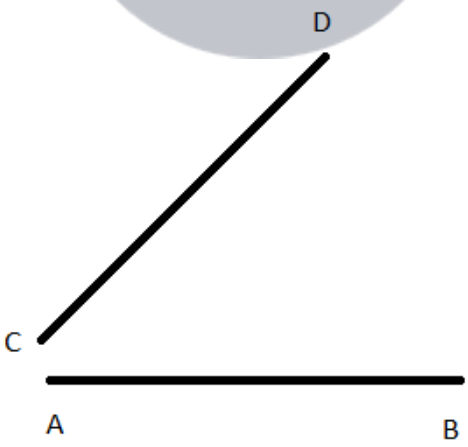
(i) AH ∥ DG ∥ CF ∥ BE

(ii) AB ∥ DC ∥ GF ∥ HE

(iii) AD ∥ HG ∥ EF ∥ BC

Question: 3

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



Solution:

In the given position, segments AB and CD do not intersect, but hey can if extended to a point. No, they are not parallel, as the distance between them is not constant.

Question: 4

State which of the following are true or false:

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 perpendicular l and n perpendicular l and m ≠ n, then m parallel to n

iv) Two non – intersecting co –planar rays are parallel

iv) If Ray AB parallel to m, then line segment AB parallel to m

v) If Ray AB parallel to m, then line segment AB parallel to m

vi) No two parallel segments intersect each other

vii) Every pair of lines is a pair of co-planar lines

viii) Two lines perpendicular to the same line are parallel

ix) A line perpendicular to one of two parallel lines is perpendicular to each other

Solution:

State which of the following are true or false:

i) True

ii) False

iii) True

iv) False

iv) True

v) True

vi) True

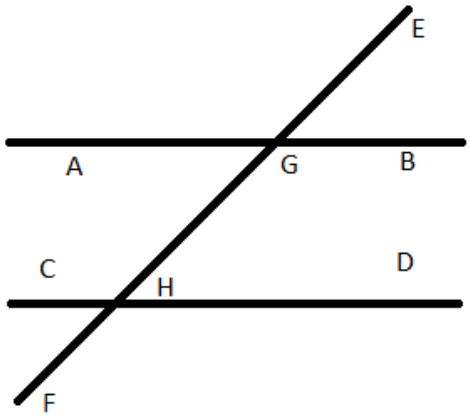
vii) False

viii) True

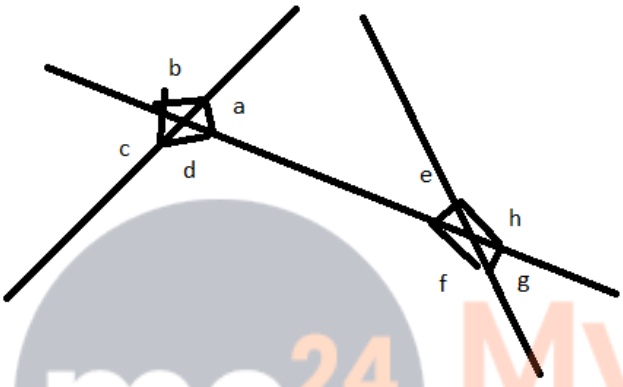
ix) True

Question: 5

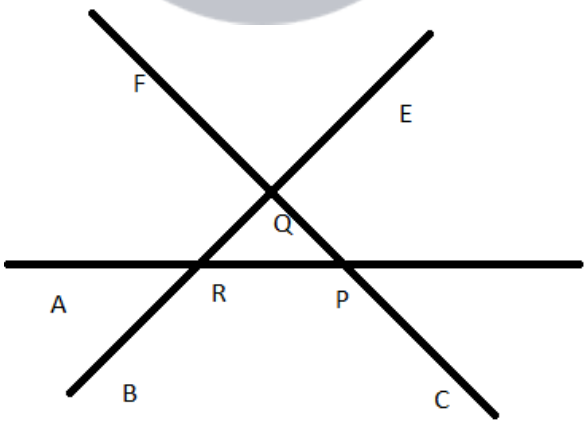
i) Alternate corresponding angles



ii) Angles alternate to ∠d and ∠g and angles corresponding to angles ∠f and ∠h in the figure



iii) Angles alternative to ∠PQR, angle corresponding to ∠RQF and angle alternative to ∠PQE in the figure



Solution:

i)

Alternate interior angles are:

Angle BGH and angle CHG

Angle AGH and angle CHF

Alternate exterior angles:

Angle AGE and angle DHF

Angle EGB and angle CHF

Corresponding angles are:

Angle EGB and angle GHD

Angle EGA and angle GHC

Angle BGH and angle DHF

Angle AGF and angle CHF

ii)

The alternate angle to ∠d is ∠e and alternate angles to ∠g is ∠b

The corresponding angles to ∠f is ∠c and ∠h is ∠a

iii)

In the given figure. 'I' is a transversal to 'm' and 'n'

So, the alternate angle of ∠PQR is ∠QRA

The corresponding angle ∠RQF and ∠BRA

The alternate angle of ∠PQE is ∠BRA

Question: 6

Match column A and column B.

i) Vertically opposite angles → a. ∠PAB and ∠ABS

ii) Alternate angles → b – ∠PAB and ∠RBY

iii) Corresponding angles → c. ∠PAB and ∠XAQ

Solution:

i) Vertically opposite angles → c. ∠PAB and ∠XAQ

ii) Alternate angles → a. ∠PAB and ∠ABS

iii) Corresponding angles → b – ∠PAB and ∠RBY