STEPPING STONE
SCHOOL (HIGH)

CLASS: IX

SUBJECT - MATH

TOPIC : MID – POINT & INTERCEPT THEOREMS

Dated : 24.06.2020

WORKSHEET # 21

TOPIC: MID POINT THEOREM. [COMPREHENSIVE TEST]

_The students are requested to revise worksheet no: 19 and 20 before attempting this worksheet._

TIME : 60 min.

Multiple Choice Questions,

Choose the correct answer from the given four options (1 to 6):

1 In a $\triangle ABC$, AB = 3 cm, BC = 4 cm and CA = 5 cm. If D and E are mid-points of AB and BC respectively, then the length of DE is

    (a) 1·5 cm   (b) 2 cm   (c) 2·5 cm   (d) 3·5 cm

2 In the adjoining figure, ABCD is a rectangle in which AB = 6 cm and AD = 8 cm. If P and Q are mid-points of the sides BC and CD respectively, then the length of PQ is

    (a) 7 cm   (b) 5 cm

    (c) 4 cm   (d) 3 cm
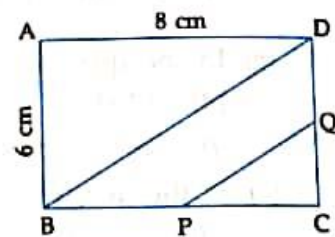
3 D and E are mid-points of the sides AB and AC of $\triangle ABC$ and O is any point on the side BC. O is joined to A. If P and Q are mid-points of OB and OC respectively, then DEQP is

    (a) a square   (b) a rectangle   (c) a rhombus   (d) a parallelogram

4 The quadrilateral formed by joining the mid-points of the sides of a quadrilateral PQRS, taken in order, is a rectangle if

    (a) PQRS is a parallelogram   (b) PQRS is a rectangle

    (c) the diagonals of PQRS are perpendicular to each other

    (d) the diagonals of PQRS are equal.

5 The quadrilateral formed by joining the mid-points of the sides of a quadrilateral ABCD, taken in order, is a rhombus if

    (a) ABCD is a parallelogram   (b) ABCD is a rhombus

    (c) the diagonals of ABCD are equal

    (d) the diagonals of ABCD are perpendicular to each other.

6 The figure formed by joining the mid-points of the sides of a quadrilateral ABCD, taken in order, is a square only if

    (a) ABCD is a rhombus

    (b) diagonals of ABCD are equal

    (c) diagonals of ABCD are perpendicular to each other

    (d) diagonals of ABCD are equal and perpendicular to each other.

1 ABCD is a rhombus with P, Q and R as mid-points of AB, BC and CD respectively. Prove that PQ ⊥ QR.

2 The diagonals of a quadrilateral ABCD are perpendicular. Show that the quadrilateral formed by joining the mid-points of its adjacent sides is a rectangle.

3 If D, E, F are mid-points of the sides BC, CA and AB respectively of a ∆ABC, prove that AD and FE bisect each other.

4 In ∆ABC, D and E are mid-points of the sides AB and AC respectively. Through E, a straight line is drawn parallel to AB to meet BC at F. Prove that BDEF is a parallelogram. If AB = 8 cm and BC = 9 cm, find the perimeter of the parallelogram BDEF.

[Ans. 17 cm.]

5 In the adjoining figure, ABCD is a parallelogram and E is mid-point of AD. DL ∥ EB meets AB produced at F. Prove that B is mid-point of AF and EB = LF.
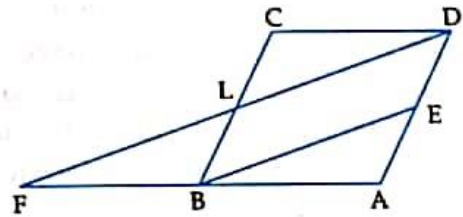
6 In the adjoining figure, ABCD is a parallelogram. If P and Q are mid-points of sides CD and BC respectively. Show that CR = $\frac{1}{4}$AC.