INTERNATIONAL INDIAN SCHOOL

BURAIDAH

Worksheet For The Academic Year 2024-25

CLASS: IX SUBJECT: Mathematics DATE: 15/09/2024

LESSON-8 Quadrilaterals

1) Prove that the diagonals of a parallelogram divides it into two congruent triangles.
2) The angles of a quadrilateral are in the ratio 2:3:6:7. Find the largest angle of the quadrilateral.
3) Prove that the diagonals of a rectangle are equal in length.
4) PQRS is a parallelogram . PL and RM are perpendiculars drawn from P and R to the parallelogram on diagonal SQ. Show that
   (i) $\triangle PQL \cong \triangle RMS$ (ii) PL = RM
5) Prove that the diagonals of a square are equal and perpendicular to each other.
6) In parallelogram PQRS ,bisectors of $\angle P$ and $\angle Q$ are PT and QT respectively intersecting inside the parallelogram at T. Find $\angle PTQ$.
7) D , E , F are midpoints of BC , CA, AB of $\triangle ABC$. If perimeter of $\triangle ABC$ Is 12.8cm , find perimeter of $\triangle DEF$.
8) $\triangle ABC$ is right angled at C. A line through the midpoint M of hypotenuse AB and parallel to BC intersect AC at D. Show that
   (i) D is the midpoint of AC (ii) MD $\perp$ AC.
9) D , E , F are midpoints of PQ , QR and RP respectively of equilateral $\triangle PQR$. Show that $\triangle DEF$ is also equilateral.
10) Prove that the quadrilateral formed by joining the midpoints of consecutive sides of a rectangle is a rhombus.
11) If an angle of a parallelogram is two third its adjacent angle , find the angles

of the parallelogram.

12) The perimeter of a parallelogram is 22cm . If the longer side measures 6.5cm , what is the measure of the shorter side?

13) In parallelogram ABCD , points M and N are taken on AB and CD respectively such that AM = CN . Show that AC and MN bisect each other.

14) ABCD is a square and E, F, G, H are midpoints of AB , BC , CD and AD respectively. Prove that EFGH is a square.

15) ABCD is a parallelogram in which AB is produced to E so that BE = AB. Prove that ED bisects BC.

ANSWERS

2) 140° 6) 90° 7) 6.4cm 11) 108°, 72° ,108° , 72° 12) 4.5cm