<u>INTERNATIONAL INDIAN SCHOOL</u> <u>BURAIDAH</u>

Worksheet For The Academic Year 2023-24 CLASS: <u>IX</u> SUBJECT: <u>Mathematics</u> DATE: <u>10/09/2023</u> <u>LESSON-8 Quadrilaterals</u>

- 1) The angles of a quadrilateral are 4x,7x,15x and 10x. Find the smallest and the largest angles of the quadrilateral.
- 2) If the angles of a quadrilateral are in the ratio 1: 2: 3: 4, find the measures of all the angles of the quadrilateral.
- 3) Two opposite angles of a parallelogram are (3x 2) and (63 2x), find the angles of the parallelogram.
- 5) Prove that the diagonals of a rectangle are equal in length.
- 6) Prove that " A diagonal of a parallelogram divides it into two congruent triangles".
- 7) PQRS is a parallelogram with PL and RM perpendiculars drawn from the vertices P and R of the parallelogram on diagonal SQ. Show that (i) Δ PQL is congruent to Δ RMS (ii) PL = RM
- 8) Show that the diagonals of a rhombus are perpendicular to each other.
- 9) ABCD is a trapezium in which AB is parallel to CD and E is the midpoint of AD. If F is the midpoint of BC such that the segment EF is parallel to DC, prove that F is the midpoint of BC and $EF = \frac{1}{2}(AB + DC)$
- 10) $\triangle ABC$ is right angled at B and P is the midpoint of AC. Prove that (i) PQ $\perp AB$ (ii) Q is the midpoint of AB (iii) PA = PB = $\frac{1}{2}$ AC.
- 11) PQRS is a parallelogram. If A and B are points on QR and PS respectively Such that $QA = \frac{1}{3}QR$ and $SB = \frac{1}{3}SP$, show that QASB is a parallelogram.
- 12) In quadrilateral ABCD, AB = CD and AC bisects $\Box A$, show that $\triangle ABC$ is congruent to $\triangle ADC$.
- 13) \triangle ABC is an equilateral triangle with D,E,F as the midpoints of BC,CA,AB respectively. Prove that \triangle DEF is also equilateral.
- 14) State Midpoint Theorem and also state its converse.
- 15) In trapezium ABCD, AB is parallel to CD and $\Box A = 35$, $\Box B = 75$. Find $\Box C$ and $\Box D$.