Q1. In fig(i): If OC = OD, prove that AD = FC.

Q2. In fig(ii): Prove that CB = CE.

Q3. In fig(iii): If CP // DQ and BP = BC, prove that (a) CP = CD, (b) DP bisects ∠CDQ.

Q4. If the bisector of an angle of a triangle bisects the opposite side, prove that the triangle is isosceles.

Q5. P is a point on the bisector of an ∠ABC. If a line through P parallel to AB meets BC at Q, prove that ΔBPA is isosceles.

Q6. Prove that the diagonals of an isosceles trapezium are equal.

Q7. In fig(iv): ABCD and AXYZ are both squares. Prove that BX = DZ.

Q8. In fig(v): Prove that PT = QT and ∠TQR = 15°.

Q9. In fig(vi): AB ∥ MD and AC ∥ NE. If BD = CE, prove that ∠BNE = ∠DMC.

Q10. In a ΔABC, AD is the bisector of ∠A. If D lies on BC, prove that AB > BD and AC > CD.
Q11. In fig. (vii): AB || CD, EC || BF and AB = CD. Prove that AN = DM and BN = CM.

Q12. In fig. (viii): Prove that QM = QN.

Q13. In fig. (ix): If EB = EC and \( \angle 1 = \angle 2 \), prove that AC = DB.

Q14. In \( \triangle ABC \), AD is a median. If BL and CM are perpendiculars on AD and AD produced, prove that BL = CM.

Q15. In \( \triangle ABC \), AD is a median. Prove that \( AB + AC > 2AD \).

Q16. Prove that the perimeter of a quadrilateral is greater than the sum of its diagonals.

Basics: Being ignorant is not so much a shame as being unwilling to learn to do things the right way. The illusion of knowledge is not education, but ignorance. Foolish people have a strange kind of confidence which comes only with ignorance. There is nothing wrong with ignorance, but making a career out of it is stupidity. Ignorance is not bliss. It is misery, tragedy, poverty and sickness. If incomplete knowledge is dangerous, so is a lot of ignorance, which leads to pettiness, fear, dogmatism, egotism and prejudice. Wisdom is nothing more than dispelling ignorance. It is sad to see that we teach and learn everything, but the most essential things. What good is intellectual education without understanding human dignity and compassion? Schools are a fountain of knowledge where some students come to drink, some others just to sip and the remaining ones just gargle. Start by doing what is necessary, then what is possible, and suddenly you are doing the impossible. If you are going to change your life, you need to start immediately. You may be disappointed if you fail, but you will be doomed if you don’t try. Best Wishes from Rajeev Maakan.