Chapter- 7

Triangles

WORKSHEET

1 Mark

(1) In triangles ABC and DEF, AB = FD and ∠A = ∠D. The two triangles will be congruent by SAS axiom if

(a) BC = EF (b) AC = DE

(b) AC = EF (d) BC = DF

(2) If Δ ABC = Δ DEF, AB = DE and BC = EF, then the necessary condition for congruency is

(a) ∠A = ∠D (b) ∠B= ∠E

(c) ∠C = ∠F (d) CA = DE

(3) In triangles ABC and DEF, AB = AC, ∠C = ∠D and ∠B = ∠E. The two triangles are

(a) isosceles and congruent

(b) isosceles but not congruent

(c) congruent but not isosceles

(d) neither isosceles nor congruent

(4) In two triangles ABC and DEF, AB = DE and AC = EF. The two angles from the two triangles that must be equal to make the two triangles congruent are

(a) ∠A and ∠D (b) ∠A and ∠F

(c) ∠B and ∠E (d) ∠A and ∠E

(5) In triangles ABC and PQR, if ∠A = ∠R, ∠B = ∠P and AB= RP, then which one of the following congruency criteria can be used?

(a) SAS (b) ASA

(c) SSS (d) RHS

(6) In triangles ABC and PQR, AB = QP, ∠B = ∠P and BC= QR. The two triangles will be congruent by axiom

(a) SAS (b) ASA

(c) SSS (d) RHS

(7) In Δ ABC, AB = AC and ∠B = 50^0. Then ∠C is equal to

(a) 40^0 (b) 50^0 (c) 80^0 (d) 130^0

(8) In ΔPQR, ∠R = ∠P and QR=4 cm and PR = 5 cm. Then the length of PQ is

(a) 4cm (b) 5 cm. (c) 2 cm. (d) 2.5 cm.

(9) D is a point on the side BC of a Δ ABC such that AD bisects ∠BAC. Then
(a) BD=CD (b) BA > BD
(c) BD > BA (d) CD > CA

(10) Two sides of a triangle are of lengths 5 cm and 1.5 cm. The length of the third side of the triangle cannot be
(a) 3.6 cm (b) 4.1 cm. (c) 3.8 cm (d) 3.4 cm.

2 Marks

(11) Two circles are congruent if their _____ are equal.

(12) Two lines segments are congruent, if their _____are equal.

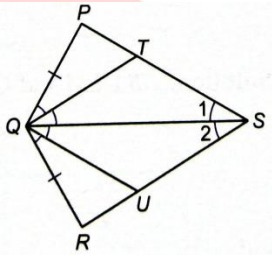
(13) Sides opposite to equal sides of a triangle are _____.

(14) Each angle of an equilateral triangle is of _____.

(15) In a Δ ABC, if ∠A = ∠ C, then AB = _____.

3 Marks

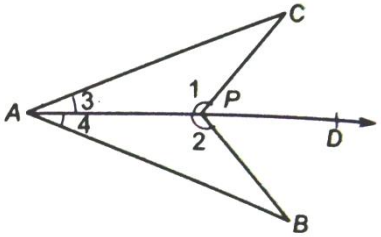
(16) In figure PQRS is a quadrilateral and T and U are respectively points on PS and RS such that PQ = RQ



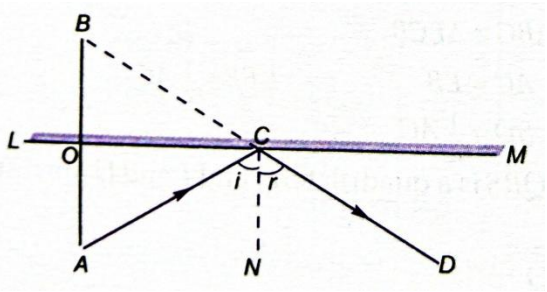
∠PQT = ∠RQU and ∠TQS = ∠UQS

Prove that QT = QU.

(17) In figure ∠CPD = ∠BPD and AD is the bisector of ∠BAC. Prove that Δ CAP = ΔBAP and hence CP = BP.

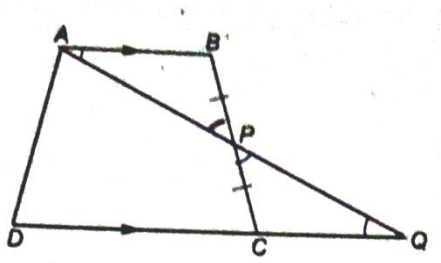


(18) The image of an object placed A before a plane mirror LM is seen at the point B by an observe at D as shown figure. Prove that the image is as far behind the mirror as the object is in front of the mirror.

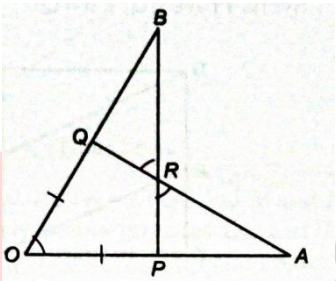


(19) In figure, ABCD is a quadrilateral in which AB || DC and P is the mid-point of BC. On producing, AP and DC meet at Q. prove that

(i) AB = CQ (ii) DQ = DC + AB.



(20) In figure, OA = OB and OP = OQ. Prove that (i) PR = QR (ii) AR = BR.



4 Marks

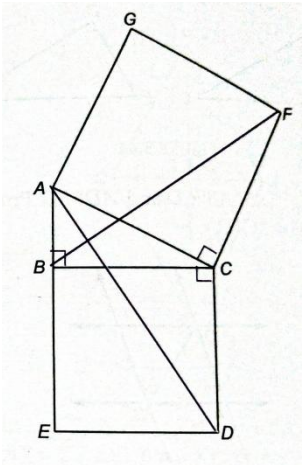
(21) If the external bisector of the vertical angle of a triangle is parallel to its base, then the triangle is isosceles.

(22) Find all the angles of an equilateral triangle.

(23) AB is a segment. AX and BY are two equal segments drawn on opposite sides of line AB such that AX || BY. If line segments AB and XY intersect each other at the point P, prove that

(i) $\Delta APX \cong \Delta BPY$, and

(ii) line segments AB and XY bisect each other at P.



(24) In figure ABC is a triangle, right angled at B. If BCDE is a square on side BC and ACFG is a square on AC, prove that AD = BF.

(25) ABC and DBC are two triangle on the same base BC such that AB= AC and BD = CD. Prove that $\angle ABD = \angle ACD$.