MODULE 3/3

WORKSHEET

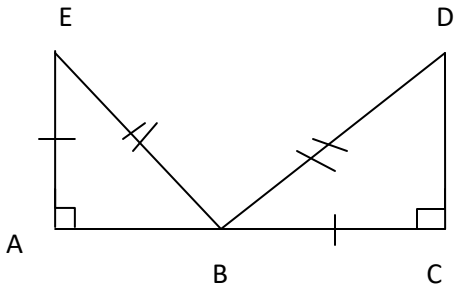
Std VII MATHEMATICS

CONGRUENCE OF TRIANGLES

1. We want to show $\Delta ART \cong \Delta PEN$. We have to use ASA criterion. We have AT = PN, $\angle A = \angle P$. What more we need to show?

2. Which congruence criterion do you use in the following? Given EB = DB, AE = BC

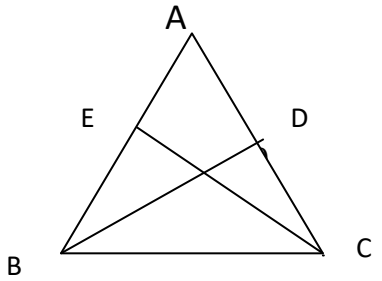
$\angle A = \angle C = 90°$



3. Monica wants to prove that $\Delta FGH = \Delta JKL$ using RHS. She knows that FG = JK and FH = JL. What additional piece of information does she need?

(a) $\angle H = \angle L = 90°$ (b) $\angle F = \angle G = 90°$ (c) $\angle G = \angle K = 90°$ (d) $\angle F = \angle J = 90°$

4. In the figure, BD and CE are altitudes of ΔABC such that BD = CE,



(i) State the three pairs of equal parts in ΔCBD and ΔBCE.

(ii) Is ΔCBD $\cong$ ΔBCE ? Why or Why not?

(iii) Is $\angle$DCB = $\angle$EBC? Why or Why not?

5. In ΔABC, $\angle$A = 30°, $\angle$B = 40° and $\angle$C = 110°.

In ΔPQR, $\angle$P= 30°, $\angle$Q = 40° and $\angle$R = 110°.

A student says that ΔABC $\cong$ ΔPQR by AAA congruence. Is he justified? Why or Why not?

6. Given below are measurements of some parts of two triangles. Examine whether the two triangles are congruent or not by ASA congruence rule. In case of congruence write it in symbolic form.

(i) In ΔDEF, $\angle$D = 60°, $\angle$F = 80°, DF = 5 cm.

In ΔPQR, $\angle$Q = 60°, $\angle$R = 80°, QR = 5 cm.

(ii) In ΔDEF, $\angle$D = 60°, $\angle$F = 80°, DF = 6m.

In ΔPQR, $\angle$Q = 60°, $\angle$R = 80°, QP = 6m.

7. ABC is an isosceles triangle with AB = AC and AD is one of its altitudes.

(i) State the three pairs of equal parts in ΔADB and ΔADC.

(ii) Is ΔADB $\cong$ ΔADC? Why or Why not?

(iii) Is $\angle$B = $\angle$C? Why or Why not?

(iv) Is BD = CD? Why or Why not?

8. Which of the following pairs of triangles are congruent?

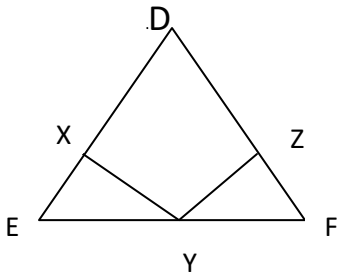
(i) ΔABC, AB = 10cm, $\angle$A = 40°, $\angle$B = 55°.

ΔEFG, EF = 10 cm, $\angle$E = 40°, $\angle$F = 55°.

(ii) ΔPQR, PQ = 5cm, $\angle P = 37°$, $\angle R = 64°$.

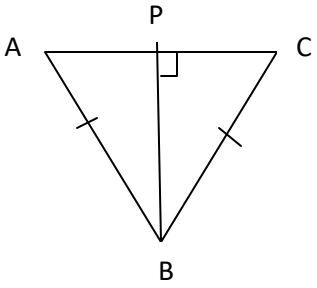
ΔEFG, EF = 5 cm, $\angle E = 37°$, $\angle F = 64°$.

9.In the figure Y is the midpoint of EF. If XY = YZ, $\angle EXY = \angle FZY = 90°$ show that DE = DF.



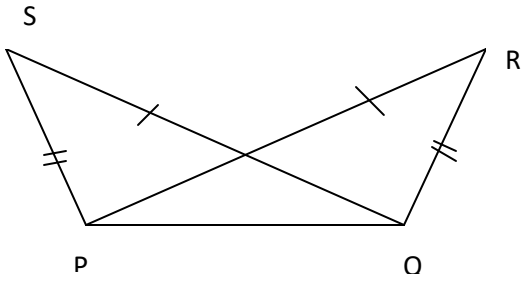
10. Complete the congruence statements

(i)



ΔBAP ≅ _____

(ii)



ΔQPR ≅ _____