# INDIAN SCHOOL MUSCAT
## SENIOR SECTION
## DEPARTMENT OF MATHEMATICS
## CLASS IX
## WORKSHEET NO. 5
## TRIANGLES

**SECTION A: (1 MARK)**

1. In ΔPQR if $\angle QPR = 80°$ and $PQ = PR$, find $\angle R$ and $\angle Q$ (CCE 2010)

2. In the given fig 1, Mention the congruency rule used in proving ΔACB ≅ ΔACD

3. In the given figures, BD and YE are the medians. Find the value of YZ.(State the reasons)

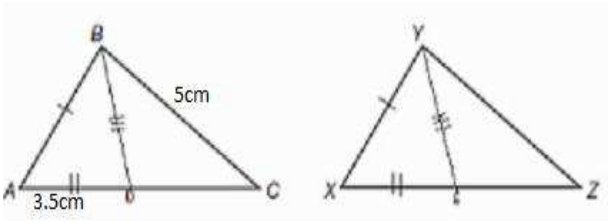
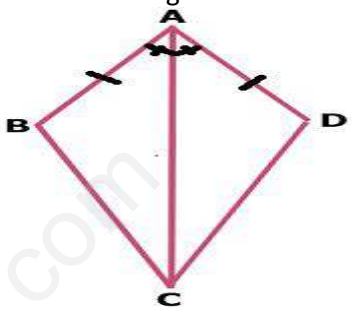



Fig1




**SECTION B: (2 MARKS)**

4. Line segments AB and CD intersect at M. If AC‖DB and M is midpoint of AB. Prove that M is midpoint of CD. (CCE 2010)

5. In the given figure, RV = VT, QV = VU, $VR \perp SQ$ and $VT \perp SU$. Prove that SQ =SU.

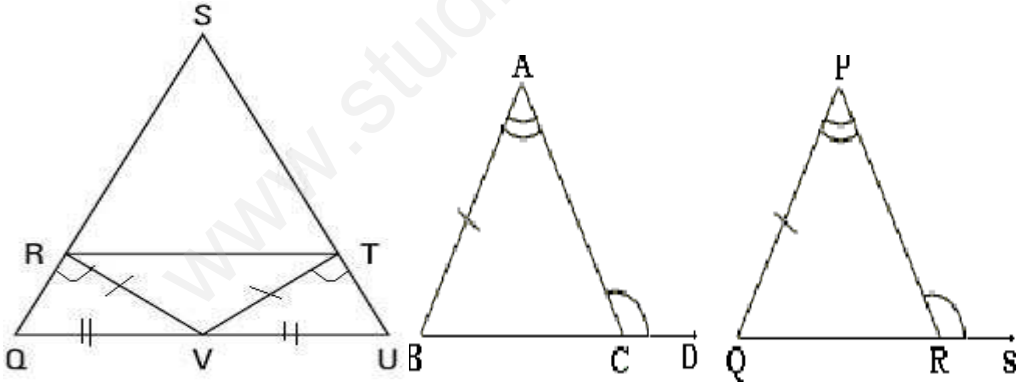



Fig 5.

6. In ΔPSR, Q is a point on SR such that PQ = PR, show that PS > PQ.

7. In fig5, AB =PQ, $\angle A = \angle P$ and $\angle ACD = \angle PRS$. Prove that $\Delta ABC \cong \Delta PQR$.

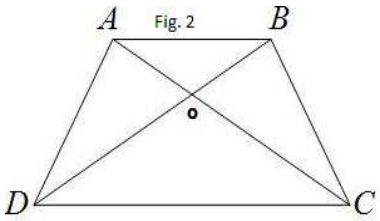
8. In ΔABC, AD is the bisector of $\angle BAC$. Prove that $AB > BD$.

**SECTION C: (3 MARKS)**

**9.** ABCD is a square. X and Y are points on the sides AD and BC such that AY = BX. Prove that $\angle XAY = \angle YBX$. (CCE 2013)

**10.** In fig 2., AD = BC and BD = AC , prove that $\angle DAB = \angle CBA$ (CCE 2014)

**11.** In fig3., l ∥ m and p ∥ q . Show that ΔABC ≅ ΔCDA.



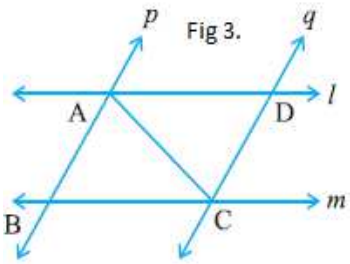
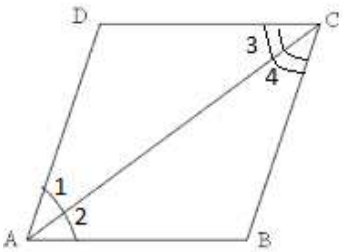
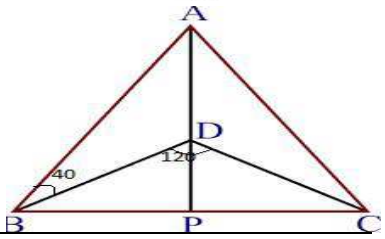




Fig 4.




**12.** In the given fig, ΔABC and ΔDBC are two isosceles triangle on the same base BC . If $\angle BDC = 120°$ and $\angle ABD = 40°$, then find $\angle BAC$ and $\angle ADC$. (CCE 2010)

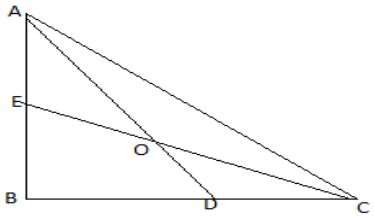



**SECTION D: (4 MARKS)**

**13.** ABC is a triangle and D is the midpoint of BC. The perpendiculars from D to AB and AC are equal. Prove that triangle is isosceles. (CCE 2013)

**14.** Two sides AB and BC and median AM of ΔABC are respectively equal to sides PQ, QR and median PN of ΔPQR then prove that ΔABC ≅ ΔPQR.

**15.** In the given figure, AD and CE are the bisectors of $\angle A$ and $\angle C$ respectively. If $\angle ABC = 90°$, find $\angle ADC + \angle AEC$. (CCE 2015)




**16.** Show that in a quadrilateral ABCD , AB + BC + CD +DA < 2 (BD + AC)