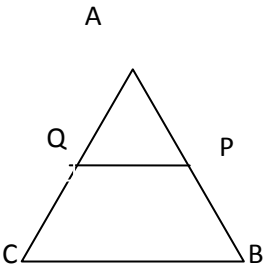
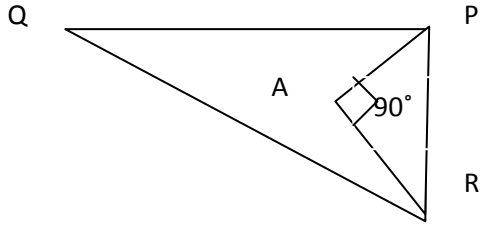
STD-X **ASSIGNMENT- 5**

SIMILAR TRIANGLES

ONE MARK QUESTIONS

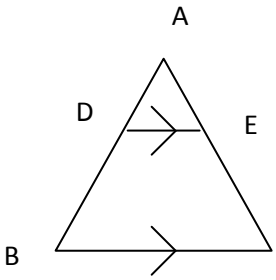


1. In fig. P and Q are points on the sides AB and AC respectively of ABC such that AP=3.5cm,PB=7cm,AQ=3cm,QC=6cm.If PQ=4.5cm.Find BC.



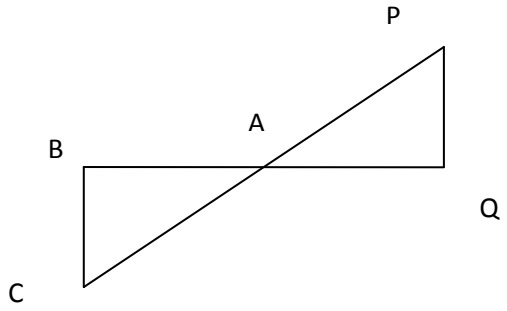
2. In the fig. PQ=2cm,QR=26cm,∠PAR=90˚, PA=6cm and AR=8cm.Find ∠QPR.

3. In the given fig. DE is parallel to BC ,AD=1cm,BD=2cm. What is ar

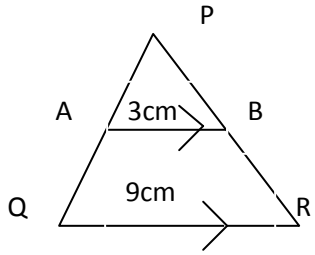


ΔABC:arΔADE?

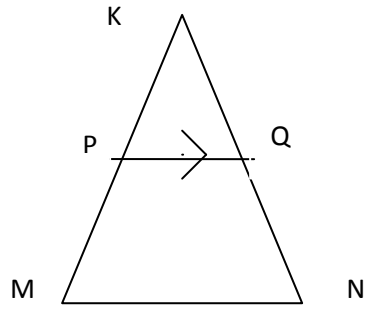
4. In the fig. ΔACB~ΔAPQ, If BC=8cm,PQ=4cm,BA=6.5cm,AP=2.8cm.Find CA and AQ.



5. In fig. AB is parallel to QR, find PB.
PR=6cm,AB=cm,QR=9cm.



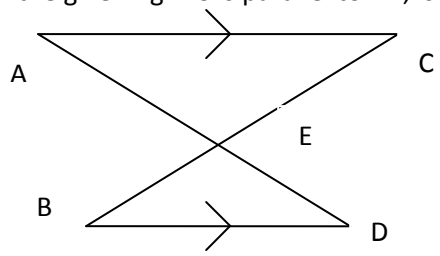
6. In fig. PQ is parallel to MN.If KP/PM=4/13 and KN=20.4cm.Find KQ.

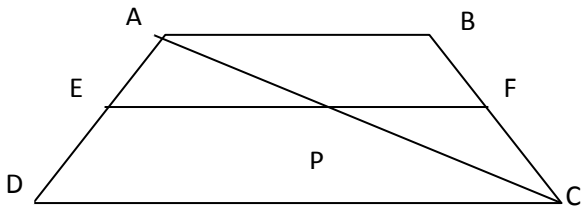


7. The perimeter of two similar triangles ABC and PQR are respectively 36cm and 24cm.If PQ=10cm.Find AB.
8. If ΔABC~ΔDEF such that area of ABC is 9cm² and the area of ΔDEF is 16cm² and BC=2.1cm.Find the length of EF.
9. If ΔABC~ΔDEF,BC=3cm,EF=4cm and area of ΔABC=54cm².Find the area of ΔDEF.
10. Two isosceles triangles have equal vertical angles and their areas are in the ratio 9:16.Write the ratio of their corresponding heights.

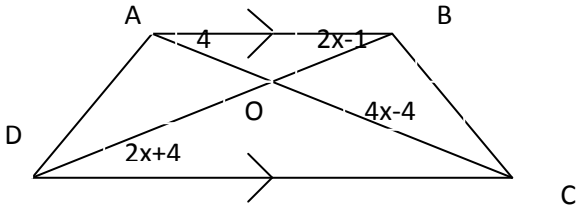
TWO MARK QUESTION

1. In the given fig. AC is parallel to BD, is AE⁄CE=DE⁄BE?

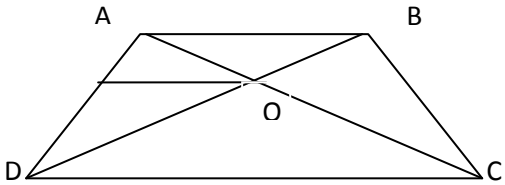


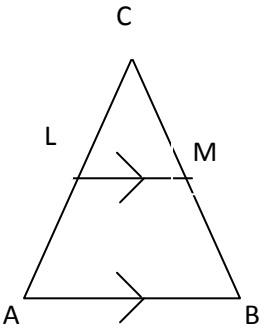


2. If ABCD is a trapezium with AB| |BD | | EF,Prove that AE⁄ED=BF/FC.
3. In the fig,AB | | CD,FIND x.(Hint:Prove that AOB~COD).

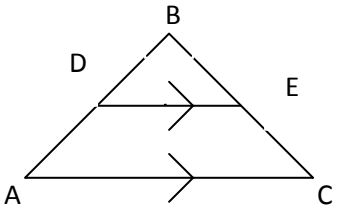


4. In the fig.AO⁄OC=OB⁄OD=1⁄2,AB=4cm.Find DC.(Hint OP | |CD| |AB).

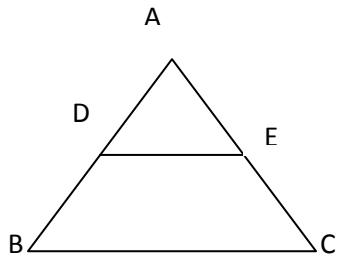




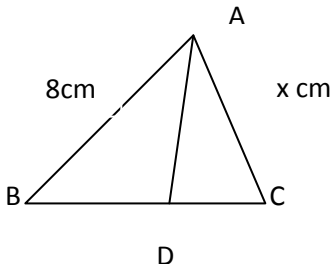
5. In the fig. LM | |AB,If AL=x-3,AC=2x,BM=x-2 and BC=2x+3.Find x.
6. E and F are points on the sides PQ and PR respectively of a Δ PQR.State whether EF | |QR if PE=3.9cm,EQ=3cm,PF=3.6cm and FR=2.4cm.
7. In ΔABC,DE| |AC,AD:BD=3:2,find the ratios of areas of ΔABC andΔBDE.



8. In ΔABC,DE| |BC,AD⁄BD=3⁄5,if AC=5.6cm,find AE.



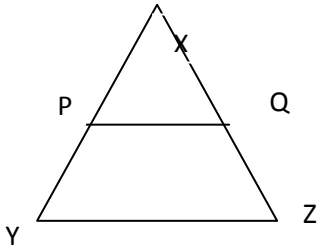
9. In the fig. AD is the bisector of ∠BAC,AB=8cm,AC=x cm, BD=5cm and CD=3cm.Find x(Hint:AB/AC=BD/CD Interior angle bisector theorem).



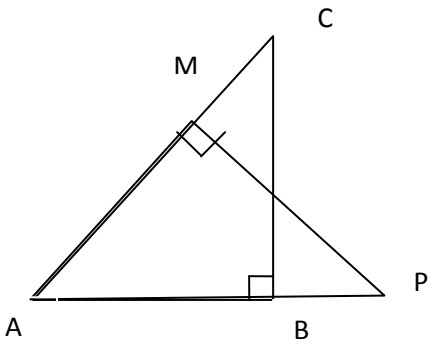
10. In ΔABC,D is the midpoint of AB, DE| |BC meets AC at E, prove that AE=1⁄2AC.

<u>THREE MARKS QUESTIONS:</u>

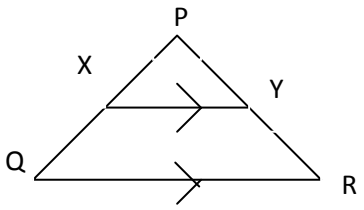
1. Two triangles ABC and DBC are on the same base BC and on the same side of BC in which ∠A=∠D=90˚. If CA and BD must intersect each other at E. Show that AE.EC=BE.ED.
2. Construction of similar triangles.
3. In fig. XP⁄PY=XQ⁄QZ=3, if the area of Δ XYZ is 32 cm² , then find area of quad. PYZQ.



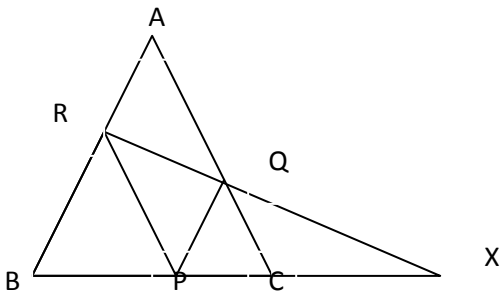
4. In the fig. ΔABC and ΔAMP are right angled at B and M respectively. Prove that CA*MP= PA*BC.



5. O is any point inside rectangle ABCD, Prove that $OB^2 + OD^2 = OA^2 + OC^2$.
6. ABC is a triangle in which AB=AC and D is any point in BC. Prove that $AB^2 - AD^2 = BD.CD$.
7. In the fig. XY || QR, PQ/XQ= 7/3 and PR= 6.8 cm . Find YR.



8. In the fig. PQ||BA, PR||CA and PX= 12cm. Find BX .CX



9. ABCD is a parallelogram. E is the midpoint of CD. The line segment joining B and E intersect AC in L and AD produced in M. Prove that LM=2BL.
10. In rhombus ABCD, each side is equal to x units. Prove that $AC^2+BD^2+4x^2$.

Four MARKS QUESTIONS :

1. Basic proportionality theorem.
2. Area of two similar triangles.
3. Pythagoras theorem
4. Converse of Pythagoras theorem.

5. A ladder reaches a window which is 12m above the ground on one side of the street, keeping its foot at the same point; the ladder is turned to the other side of the street to reach a window 9m high. Find the width of the street if the length of the ladder is 15m.
6. If Δ ABC is an equilateral triangle with AB+BC. Prove $AD^2=DC^2$.
7. Using the converse of Pythagoras theorem find the length of an altitude of an equilateral triangle of side 2cm.
8. Prove that the area of an equilateral triangle described on one side of a square is equal to half the area of the equilateral triangle described on one of its diagonals.

ANSWERS:

(1 MARKS)(1)13.5cm, (2)90˚, (3)9:1, (4) AC=5.6cm, AQ=3.25cm, (5)2cm, (6) KQ=4.8cm, (8)2.8cm, (9)96cm², (10)3:4
(2MARKS)(3) x=3 or x= -1⁄2, (4) DC=8cm,(7)25:9, (8)AE=2.1cm, (9)4.8cm

(3 MARKS)(13)14cm², (7)20.4cm, 8)144
(4MARKS)(5b) 21cm, (7b) √3cm