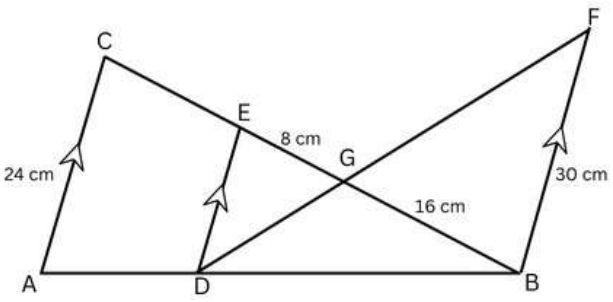
1. In the given figure, AC ‖ DE ‖ BF. If AC = 24 cm, EG = 8 cm, GB =16 cm, BF=30 cm.

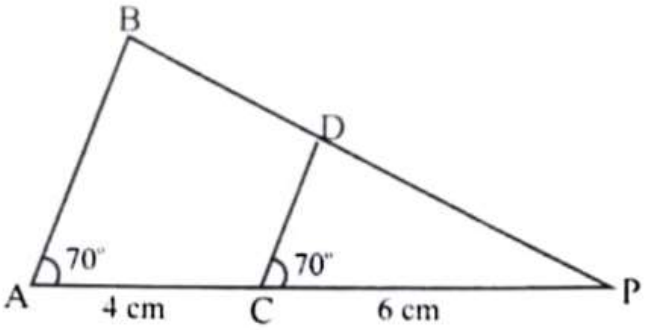
   (a) Prove ΔGED ~ ΔGBF

   (b) Find DE

   (c) DB: AB



2. In the given figure ∠BAP = ∠DCP = 70°, PC =6 cm and CA =4 cm, then PD : DB is



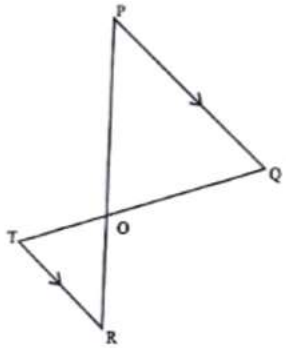
   (a) 5 : 3

   (b) 3 : 5

   (c) 3 : 2

   (d) 2 : 3 [2023]

3. In the given figure PQ is parallel to TR, then by using condition of similarity: [1]



$$\frac{PQ}{RT} = \frac{OP}{OT} = \frac{OQ}{OR}$$

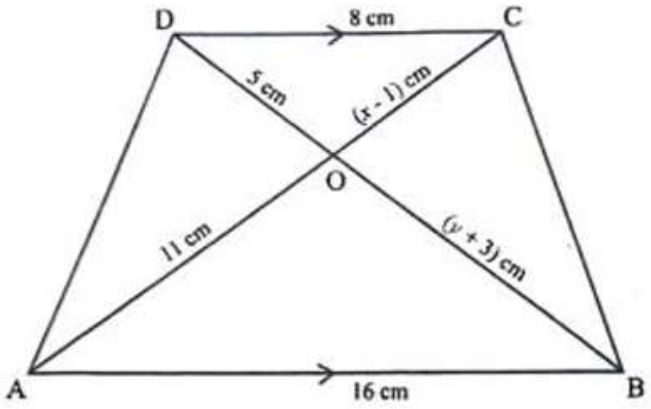
$$\frac{PQ}{RT} = \frac{OP}{OR} = \frac{OQ}{OT}$$

$$\frac{PQ}{RT} = \frac{OR}{OP} = \frac{OQ}{OT}$$

$$\frac{PQ}{RT} = \frac{OP}{OR} = \frac{OT}{OQ}$$

[2021semester-1]

4. In the given figure ABCD is a trapezium in which DC is parallel to AB. AB = 16 cm and DC = 8 cm. OD = 5 cm, OB = (y + 3) cm, OA = 11 cm and OC = (x – 1) cm. Using the given information answer the following questions. [2021 Semester-I]



(i.) From the given figure name the pair of similar triangles:

(a) ΔOAB, ΔOBC (b) ΔCOD, ΔAOB (c) ΔADB, ΔACB (d) ΔCOD, ΔCOB

(ii.) The corresponding proportional sides with respect to the pair of similar triangles obtained in (i):

(a) $\frac{CD}{AB} = \frac{OC}{OA} = \frac{OD}{OB}$ (b) $\frac{AD}{BC} = \frac{OC}{OA} = \frac{OD}{OB}$ (c) $\frac{AD}{BC} = \frac{BD}{AC} = \frac{AB}{DC}$ $(d)\frac{OD}{OB} = \frac{CD}{CB} = \frac{OC}{OA}$

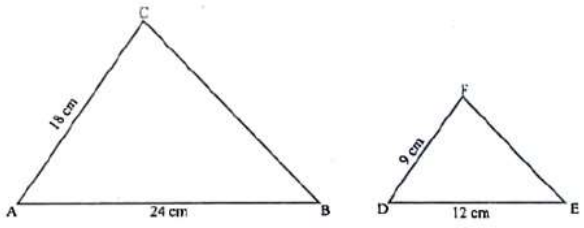
(iii.) The ratio of the sides of the pair of similar triangles is:

(a) 1 : 3 (b) 1 : 2 (c) 2 : 3 (d) 3 : 1

(iv.) Using the ratio of sides of the pair of similar triangles values of x and y are respectively:

(a) x = 4.6, y = 7 (b) x = 7, y = 7 (c) x = 6.5, y = 7 (d) x = 6.5, y = 2

5. In the given figure, AB = 24 cm, AC = 18 cm, DE = 12cm, DF = 9 cm and ∠BAC = ∠EDF. Then ΔABC ~ ΔDEF by the condition:



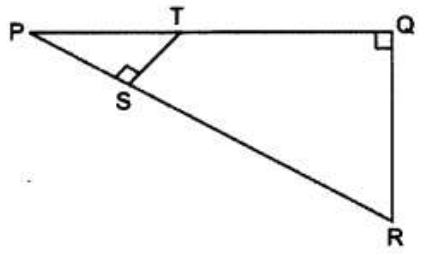
(a) AAA

(b) SAS

(c) SSS

(d) AAS [2021 Semester-1]

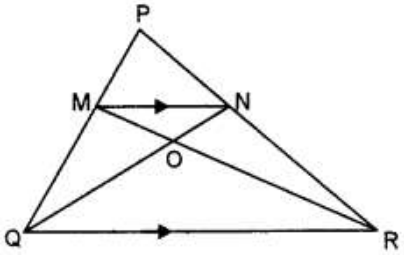
6. In the given figure, ∠PQR = ∠PST = 90°, PQ = 5 cm and PS = 2 cm.



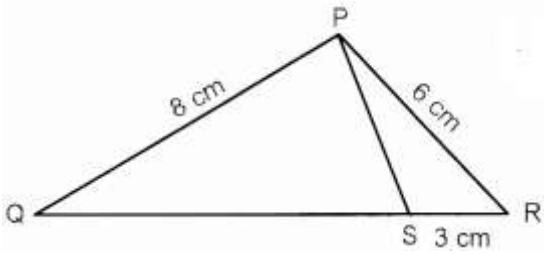
(i) Prove that △PQR ~ APST.
(ii) Find Area of △PQR: Area of quadrilateral SRQT. [2019]

7. In Δ PQR, MN is parallel to QR and PMMQ = 23 **[3]**

(i) Find MN / QR
(ii) Prove that ΔOMN and ΔORQ are similar.
(iii) Find, Area of ΔOMN: Area of ΔORQ [2018]

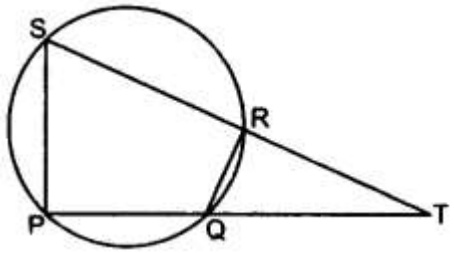


8. PQR is a triangle. S is a point on the side QR of ΔPQR such that ∠PSR = ∠QPR. Given QP = 8 cm, PR = 6 cm and SR = 3 cm. **[3]**



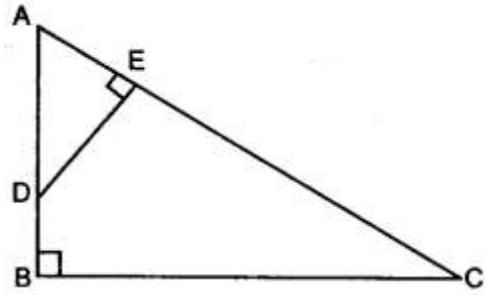
(i) Prove ΔPQR ~ ΔSPR
(ii) Find the length of QR and PS
(iii) area of ΔPQR/ area of ΔSPR [2017]

9. In the given figure PQRS is a cyclic quadrilateral PQ and SR produced meet at T. **[4]**



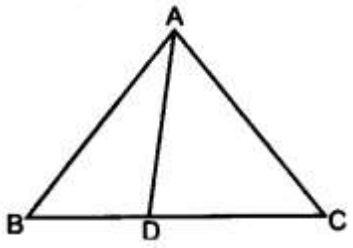
(i) Prove Δ TPS ~ Δ TRQ.
(ii) Find SP if TP= 18cm, RQ= 4cm and TR= 6cm.
(iii) Find area of quadrilateral PQRS if area of Δ PTS = 27 cm^2 [2016]

10. ABC is a right angled triangle with ∠ABC = 90°. D is any point on AB and DE is perpendicular to AC.



Prove that:
(i) ΔADE ~ ΔACB.
(ii) If AC = 13 cm, BC = 5 cm and AE – 4 cm. Find DE and AD.
(iii) Find, area of Δ ADE: area of quadrilateral BCED. [2015]

11. In ΔABC, ∠ABC = ∠DAC, AB = 8 cm, AC = 4 cm, AD = 5 cm.



(i) Prove that ΔACD is similar to ΔBCA.
(ii) Find BC and CD
(iii) Find area of ΔACD : area of ΔABC.
[2014]

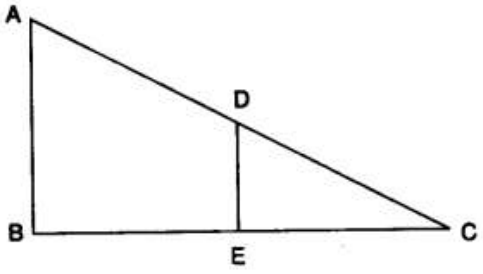
12. [2013]

In the given figure, AB and DE are perpendicular to BC.

(i) *Prove that Δ ABC ~ Δ DEC*

(ii) *If AB = 6 cm, DE = 4 cm and AC = 15 cm. Calculate CD.*

(iii) *Find the ratio of the area of Δ ABC : area of Δ DEC.* **[3]**

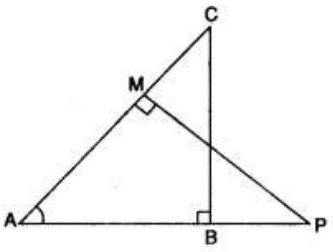


13. In the given figure Δ ABC and Δ AMP are right angled at B and M respectively.

Given, AB = 10 cm, AP = 15 cm and PM = 12 cm

(i) Prove that Δ ABC ~ Δ AMP

(ii) Find AB and BC. [3]



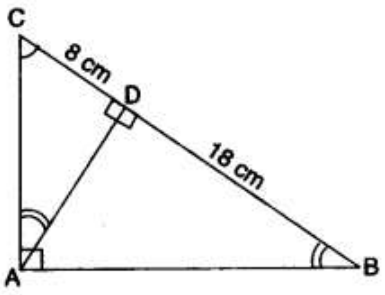
[2012]

14. In the adjoining figure ABC is a right-angled triangle with ∠BAC = 90°,

(i) Prove Δ ADB ~ Δ CDA

(ii) If BD = 18 cm and CD = 8 cm, find AD.

(iii) Find the ratio of area of Δ ADB is to area of Δ CDA.



[2011]

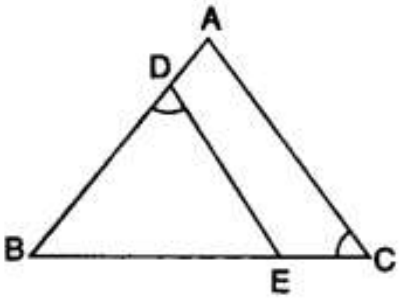
15. In the figure ABC is a triangle with ∠EDB = ∠ACB.

Prove that Δ ABC ~ Δ EBD

If BE = 6 cm, EC = 4 cm BD = 5 cm and area of ΔBED = 9 cm²

Calculate the (i) length of AB

(ii) area of Δ ABC [2010]



ANSWERS

1. (b) 15 cm (c) 5 : 8
2. (c) 3 : 2
3. (b)
4. (i) (b) (ii) (a) (iii) (b) (iv) (c)
5. (b)
6. (ii) 25 : 21
7. (i) 2/5 (iii) 4 : 25
8. (ii) OR= 10cm PS= 4cm (iii) 4 : 1
9. (ii) 12 cm (iii) 24 cm^2
10. (ii) DE = 1 2/3 cm, AD = 4 1/3 cm (iii) 1 : 8
11. (ii) BC = 6.4 cm, CD = 2.5 cm (iii) 25 : 64
12. CD = 10cm (iii) 9 : 4
13. (ii) AC= 16 2/3 cm BC = 13 1/3 cm
14. (ii) AD = 12 cm (iii) 9 : 4
15. (i) 12 cm (ii) 36 cm^2