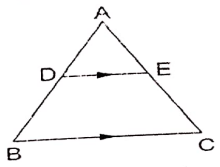
One mark 1½ മാർക്ക്

TRIANGLE PYQ

1. E and F are points on the sides PQ and PR respectively of a triangle PQR and EF || QR. If PE = 2·5 cm, PQ = 6 cm and PF = 4·5 cm, find the lengths of RF and PR.

2. In the given figure, if in triangle ABC, DE || BC, then which equalities are hold ?



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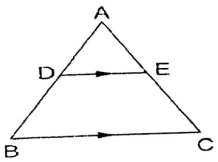
3. Which of the following is not the criterion for similarity of two triangles ?
(A) SAS (B) SSS (C) AAA (D) RHS

4. In the given figure, ABC is a triangle in which DE || BC, AD = 3 cm, BD = 4 cm and AC = 14 cm. Find the length of AE.



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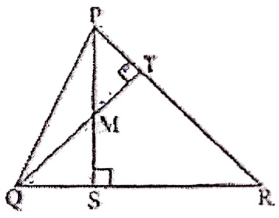
5. In the given figure, PQR is a triangle in which PS and QT are altitudes from P and Q respectively, intersecting each other at M. Prove that triangle △QSM ~ △PTM.



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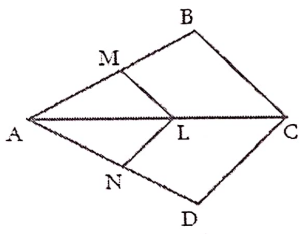
6. If a line is drawn parallel to one side of a triangle intersecting the other sides in distinct points, prove that it divides the other sides in the same ratio.
Use the above result to prove the following :
In the given figure, if ML || BC and NL || DC, then prove that AM/MB = AN/ND .



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7. A line l intersects sides PQ and PR of triangle PQR at L and M respectively such that LM || QR. If PQ = 12 cm, PR = 10 cm and PL = 7·2 cm, then find the length of PM.
8. ABCD is a trapezium with AB || DC and the diagonals intersect each other at the point O. Show that AO/BO =CO/DO .

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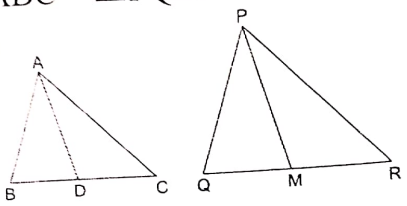
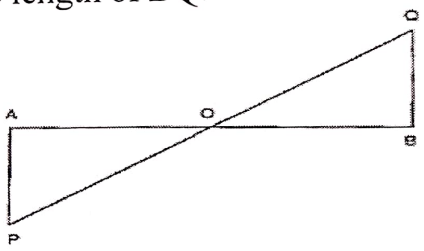
9. D is a point on the side BC of a triangle ABC such that ∠ ADC=∠ BAC. Show that $AC^2=DC.BC$

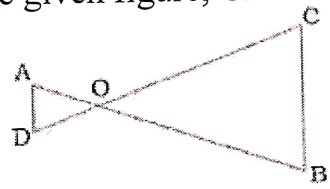
10. In given figure sides AB and AC and median AD of a triangle ABC are respectively proportional to sides PQ and PR and median PM of another triangle PQR. Show that △ABC~ △PQR.



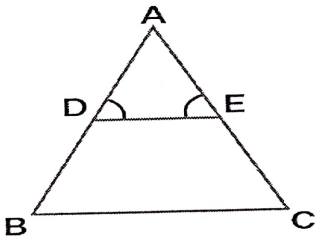
11. In the given figure, AP⊥AB and BQ⊥AB. If OA=15 cm, BO=12 cm and AP=10 cm, find the length of BQ.



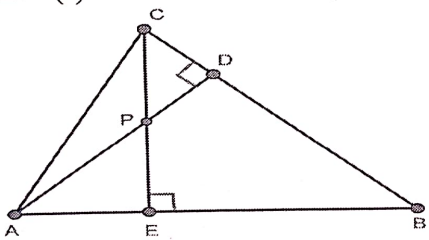
12. In the given figure, OA×OB = OC×OD. Prove that ΔAOD ~ ΔCOB.



13. In the given figure, ∠D = ∠E and AD/DB=AE/EC . Prove that ΔABC is an isosceles triangle.



14. In the given figure, altitudes CE and AD of ΔABC intersect each other at the point P. Show that (i) ΔAEP ~ ΔCDP (ii) ΔABD ~ ΔCBE (iii) ΔAEP ~ ΔADB



15. AD and PM are medians of triangles ABC and PQR, respectively where ΔABC ~ ΔPQR. Prove that AB/PQ = AD/PM.

16. If in the given figure, DE || BC. If AD = 2.8 cm, DB = 2.1 cm and EC = 4.8 cm, then the value of AE is :

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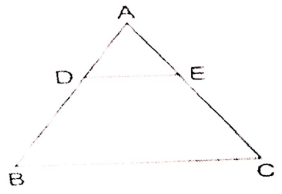

17. In the given figure, ∠ABC = ∠ACB and BC/BE = BD/AC
Show that ΔABE ~ ΔDBC and AE || DC.

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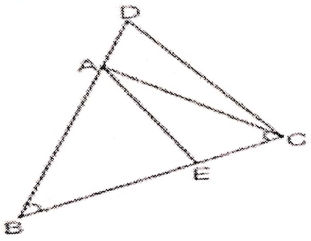

18. In the figure given below, a folding table is shown :
The legs of the table are represented by line segments AB and CD intersecting at O. Join AC and BD. Considering table top is parallel to the ground, and OB = x, OD = x + 3, OC = 3x + 19 and OA = 3x + 4, answer the following questions :

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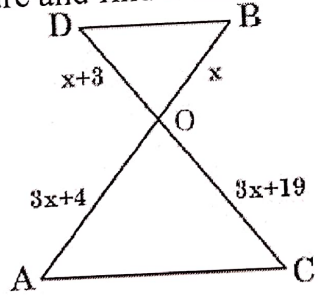
(i) Prove that ΔOAC is similar to ΔOBD.
(ii) Prove that OA/AC = OB/BD
(iii) (a) Observe the figure and find the value of x. Hence, find the length of OC. OR
(iii) (b) Observe the figure and find BD/AC.



19. In the given figure, PQ || RS. Prove that OP * OR = OQ * OS.

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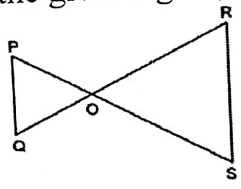

20. In the given figure, LM || CB and LN || CD. Prove that AB/AD = AM/AN

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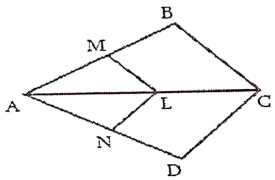
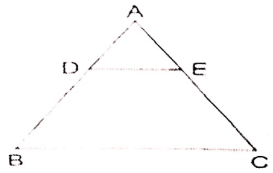


21. CD and GH are respectively the bisectors of ∠ACB and ∠EGF such that D and H lie on sides AB and FE of D ABC and D FEG respectively. If ΔABC ~ ΔFEG, show that :(i) CD/GH = AC/FG (ii) ΔDCB ~ ΔHGE (iii) ΔDCA ~ ΔHGF

22. It is given that $\Delta ABC \sim \Delta DEF$. If $\angle A = 55°$, $\angle E = 45°$, then $\angle C$ is :

23. In the given figure, in ΔABC, $DE \parallel BC$. If $AD = 2x$ cm, $AE = (x + 2)$ cm, $DB = 4$ cm, $EC = 3$ cm, then the value of x is :



24. Prove that if a line is drawn parallel to one side of a triangle to intersect the other two sides at distinct points, then the other two sides are divided in the same ratio.

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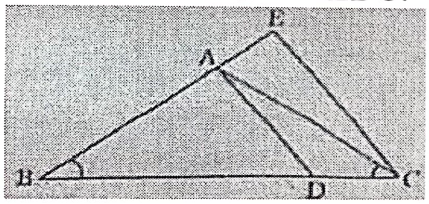
25. In ΔABC, $DE \parallel BC$. If $AD : DB = 2 : 3$, then $DE : BC$ is equal to :

26. In the given figure, $BD/BC = AC/BE$ and $\angle ABD = \angle ACD$.
Show that $\Delta ABD \sim \Delta EBC$.



27. In the given figure, ΔABC and ΔAMP are two right triangles, right angled at B and M respectively. Prove that :(i) ΔABC is similar to ΔAMP (ii) $AB*AP = AC*AM$

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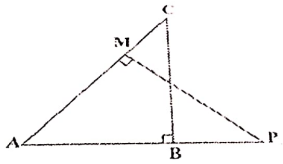

28. If in two triangles ΔABC and ΔPQR, $QR/AB = PR/BC = PQ/CA$, then :

29. The line segments joining the mid-points of the adjacent sides of a quadrilateral form a :

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30. The sides of 2 similar triangles are in ratio 4:7 . The ratio of the perimeters is

31. In the given figure, $AB \parallel CD$. If $AB = 5$ cm, $CD = 2$ cm and $OB = 3$ cm, then the length of OC is:

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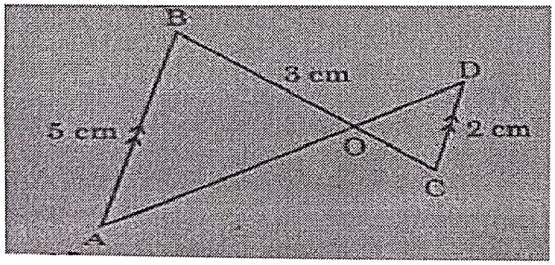

32. In the above figure, the criterion of similarity by which $\Delta ABC \sim \Delta PQR$ is : (a) SSA (Side - Side - Angle) Similarity (b) ASA (Angle - Side - Angle) Similarity (c) SAS (Side - Angle - Side) Similarity (d) AA (Angle - Angle) Similarity

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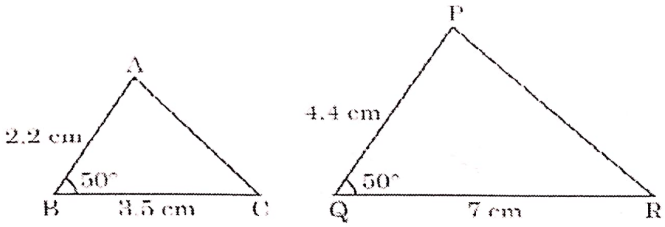
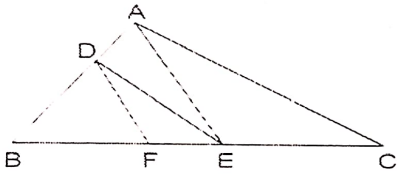


33. In the given figure, DE || AC and DF || AE. Prove that FE/BF = EC/BE.

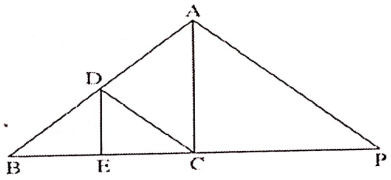


34. The diagonals of a quadrilateral ABCD intersect each other at the point O such that BO/AO = DO/CO. Show that ABCD is a trapezium. (errors-eraser)

35. The diagonal BD of a quadrilateral ABCD bisects ∠B and ∠D. show that AB/BC = AD/CD.

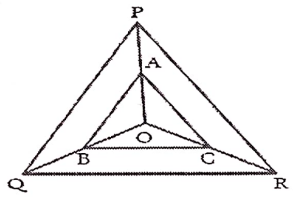
36. S and T are points on sides PR and QR of ΔPQR such that ∠P = ∠RTS. Show that ΔRPQ is similar to ΔRTS. (errors-eraser)

37. In the given figure, DE || AC and BE / EC = BC/ CP . Prove that DC ||AP.



38. If ΔABC ~ ΔDEF and ∠A = 47°, ∠E = 83°, then ∠C is equal :

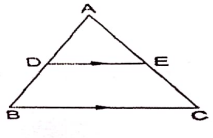
39. In the adjoining figure, A, B and C are points on OP, OQ and OR respectively such that AB||PQ and AC||PR. Show that BC||QR. (errors-eraser)



40. ΔABC and ΔDEF are similar, their perimeter are 32 and 24 respectivey, find DE if AB= 10 cm (errors-eraser)

41. In the given figure, AD = 2 cm, DB = 3 cm, DE = 2·5 cm and DE || BC.

The value of BC is :



42. In two triangles PQR and ABC , it is given that PR /PQ =BC /AB . For these two triangles to be similar, which of the following should be true ?

(a) $\angle A=\angle P$ (b) $\angle B=\angle Q$ (c) $\angle B=\angle P$ (d) CA=QR

(errors-eraser)

43. Prove that congruent triangles are also similar but not the converse. OR What more is least needed for two similar triangles to be congruent ?

44. E is a point on the side AD produced of a parallelogram ABCD and BE intersects CD at F. Show that $\Delta ABE \sim \Delta CFB$.

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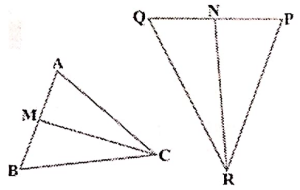
45. In Figure, CM and RN are respectively the medians of ΔABC and ΔPQR. If $\Delta ABC \sim \Delta PQR$, prove that : $\Delta AMC \sim \Delta PNR$



46. In the given figure.QR/QS = QT/PR and $\angle 1 = \angle 2$. Show that $\Delta PQS \sim \Delta TQR$.

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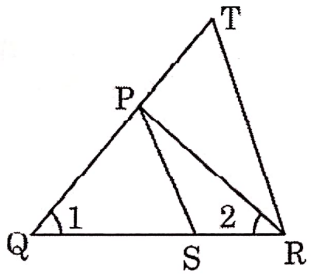

47. The perimeters of two similar triangles are 28 cm and 35 cm respectively. If one side of the first triangle is 8 cm, then the corresponding side of the second triangle is :

(errors-eraser)

48. If in triangles ABC and PQR, B = Q, R = C and AB = 2PQ, then the two triangles are :

49. In the given figure, XZ is parallel to BC. Given: AZ=3 cm, ZC=2 cm, BM=3 cm, and MC=5 cm. Find the length of XY.

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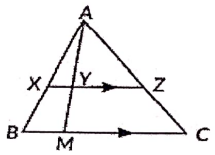

50. PA, QB, and RC are each perpendicular to AC. Given AP=x, QB=z, RC=y, AB=a, and BC=b. Prove that:

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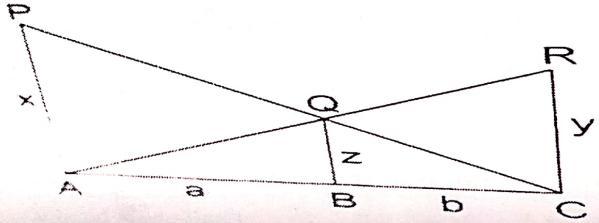
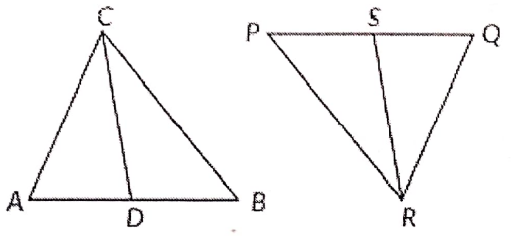
$$1/X + 1/y = 1/z$$

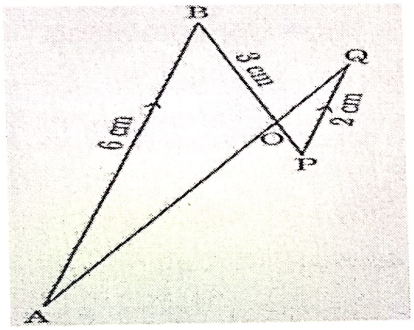


51. In the given figure, CD and RS are respectively the medians of △ABC and △PQR. If △ABC~ △PQR then prove that: (i) △ADC~ △PSR (ii) AD×PR=AC×PS (errors-eraser)



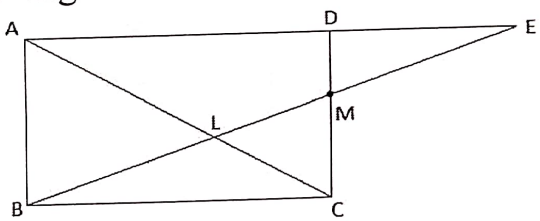
52. If △ABC is similar to △PQR with A = 32 and R = 65, then the measure of B is :

53. In the given figure, AB || PQ. If AB = 6 cm, PQ = 2 cm and OB = 3 cm, then the length of OP is : (errors-eraser)

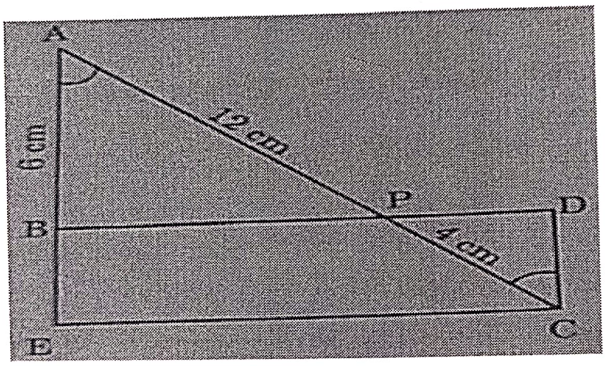


54. Sides AB and BC and median AD of a △ABC are respectively proportional to sides PQ and QR and median PM of △PQR. Show that △ABC is simlar to △PQR. (errors-eraser)

55. Through the mid-point M of the side CD of a parallelogram ABCD, the line BM is drawn intersecting AC in L and AD (produced) in E. Prove that EL = 2BL. (errors-eraser)



56. In the given figure, ∠A = ∠C, AB = 6 cm, AP = 12 cm, CP = 4 cm. Then length of CD is :

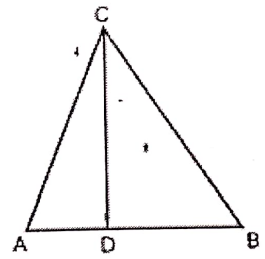


57. In ABC, PQ || BC. If PB = 6 cm, AP = 4 cm, AQ = 8 cm, find the length of AC. (errors-eraser)

58. D is a point on the side BC of a triangle ABC such that ∠ADC = ∠BAC, prove that $CA^2 = CB.CD$

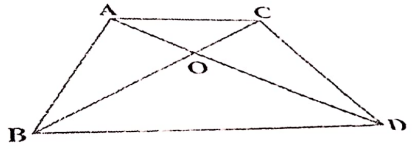
59. If AD and PM are medians of triangles ABC and PQR, respectively where ABC ~ PQR, prove that AB/PQ = AD/PM. (errors - eraser)

60. In the given figure, ∠ADC = ∠BCA ; prove that △ACB ~ △ADC. Hence find BD if AC = 8 cm and AD = 3 cm. (errors - eraser)

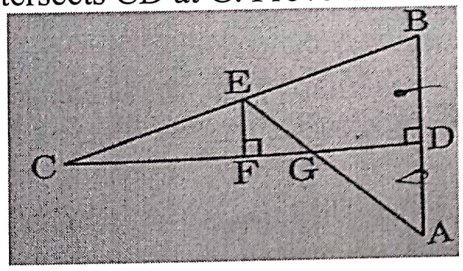


61. In a PQR, N is a point on PR, such that QN ⊥ PR. If PN × NR = QN^2, prove that ∠PQR = 90°.

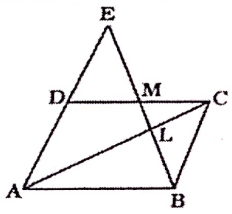
62. In the given figure, ABC and DBC are on the same base BC. If AD intersects BC at O, prove that ar (ABC) / ar (DBC) = AO /DO (errors - eraser)



63. In the given figure, CD is the perpendicular bisector of AB. EF is perpendicular to CD. AE intersects CD at G. Prove that DG /FG = CD /CF (errors - eraser)



64. In the given figure, ABCD is a parallelogram. BE bisects CD at M and intersects AC at L. Prove that EL = 2BL. (errors - eraser)

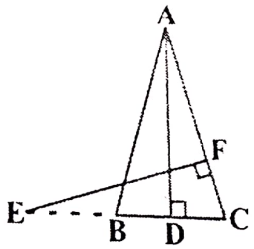


65. If △PQR ~ △ABC; PQ=6 cm, AB=8 cm and the perimeter of △ABC is 36 cm, then the perimeter of △PQR is

66. ABC is a triangle in which DE || BC. If AD = x, DB = x−2, AE = x+2 and EC = x−1, then find the value of x. (errors - eraser)

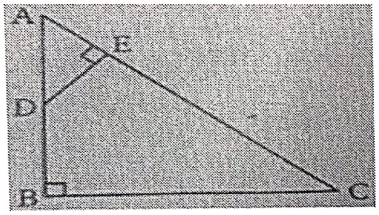
67. Diagonals AC and BD of trapezium ABCD with AB || DC intersect each other at point O. Show that OC/OA = OD/OB .

68. In given figure E is a point on side CB produced of an isosceles triangle ABC with AB = AC. If AD ⊥ BC and EF ⊥ AC, prove that △ABD ~ △ ECF.



69. In a ABC, ∠A = x, ∠B = (3x-2) and ∠C = y. Also, ∠C - ∠B = 9. Determine the three angles of the triangle.

70. In the given figure, AB is perpendicular to BC and DE is perpendicular to AC. Prove that ABC is similar to AED.



71. The perimeters of two similar triangles are 42 cm and 35 cm respectively. If one side of the first triangle is 12 cm, then the corresponding side of the second triangle is :

72. E and F are points on the sides PQ and PR respectively of a PQR. If EF ||QR and PE = 4 cm, QE = 3 cm and EF = 4 cm, then the length of QR is :

73. Prove that each of the four triangles formed by joining the mid-points of the sides of a triangle are similar to the original triangle.