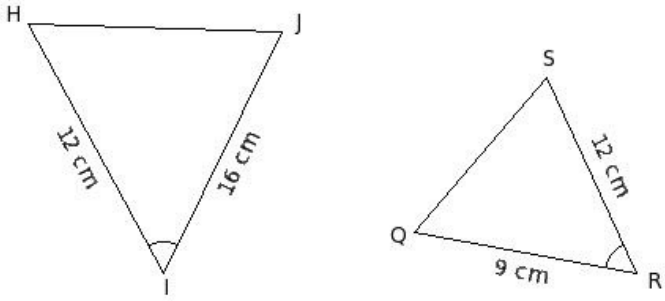
EduSahara™ Assignment

Name : Similarity of Triangles

Chapter : Similarity of Triangles

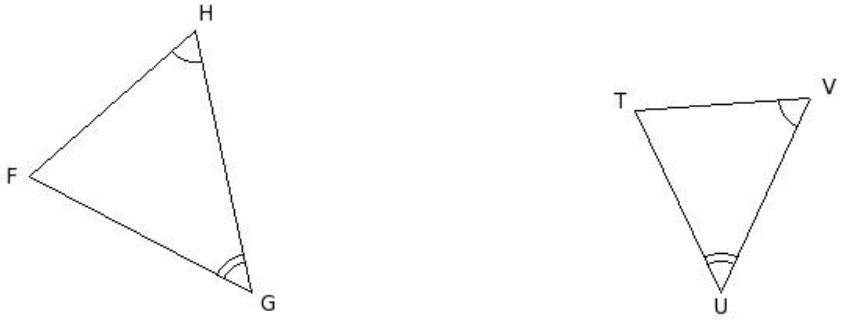
Grade : ICSE Grade X

1. Identify the property by which the two given triangles are similar



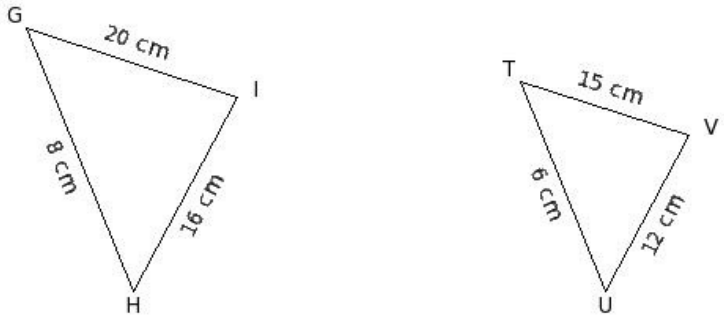
(i) not similar (ii) SAS Similarity (iii) SSS Similarity (iv) AAA Similarity

2. Identify the property by which the two given triangles are similar



(i) SSS Similarity (ii) AAA Similarity (iii) SAS Similarity (iv) not similar

3. Identify the property by which the two given triangles are similar

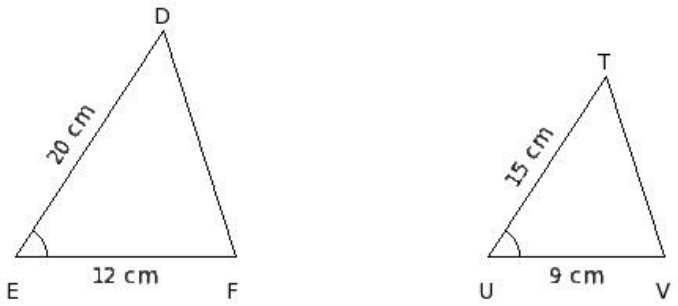


(i) SAS Similarity (ii) not similar (iii) AAA Similarity (iv) SSS Similarity

In the given figure, △DEF and △TUV are such that

4. $\angle E = \angle U$ and $\frac{DE}{TU} = \frac{EF}{UV}$.

Identify the property by which the two triangles are similar



(i) not similar (ii) AAA Similarity (iii) SAS Similarity (iv) SSS Similarity

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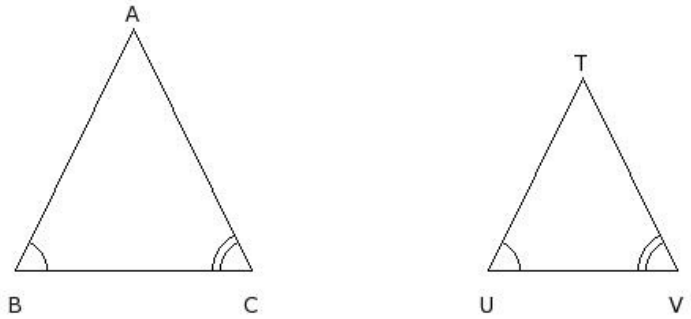
In the given figure, △ABC and △TUV are such that

5. $\angle B = \angle U$ and $\angle C = \angle V$.

Identify the property by which the two triangles are similar



(i) AAA Similarity (ii) SSS Similarity (iii) SAS Similarity (iv) not similar

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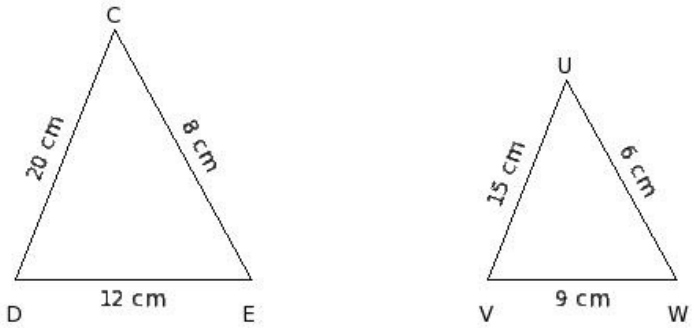
In the given figure, △CDE and △UVW are such that

6. $\frac{CD}{UV} = \frac{DE}{VW} = \frac{EC}{WU}$.

Identify the property by which the two triangles are similar



(i) AAA Similarity (ii) not similar (iii) SSS Similarity (iv) SAS Similarity

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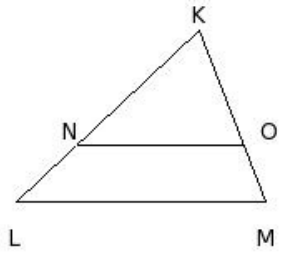
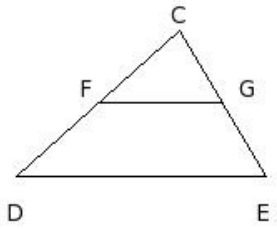
7. In the given figure, $NO \parallel LM$. If $\frac{KN}{NL} = \frac{2}{1}$ and $KM = 11.7$ cm, find KO



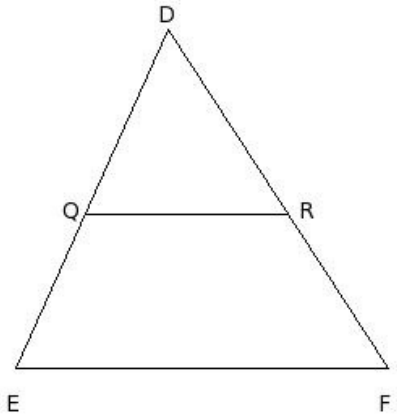
(i) 8.80 cm (ii) 5.80 cm (iii) 6.80 cm (iv) 7.80 cm (v) 9.80 cm

8. In the given figure, $FG \parallel DE$.
If $CF = 6.7$ cm, $CD = 13.4$ cm and $CE = 10.6$ cm, find CG



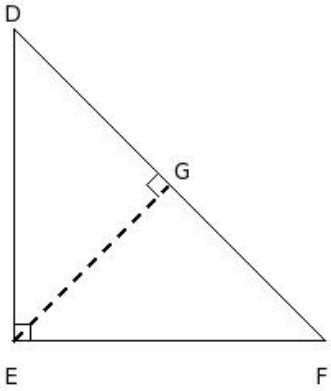
(i) 5.30 cm (ii) 6.30 cm (iii) 4.30 cm (iv) 7.30 cm (v) 3.30 cm

9. In the given figure, QR ∥ EF and DQ = 13.8 cm, DE = 23 cm and QR = 13.8 cm, find EF



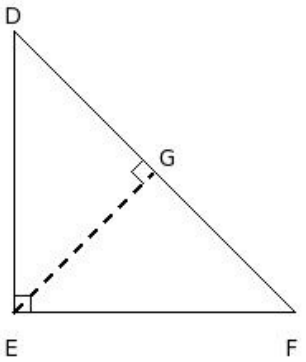
(i) 25.0 cm (ii) 21.0 cm (iii) 22.0 cm (iv) 24.0 cm (v) 23.0 cm

10. In the given figure, △DEF is isosceles right-angled at E and EG ⊥ FD. ∠G =



(i) ∠H (ii) ∠D (iii) ∠E (iv) ∠F (v) ∠I

11. In the given figure, △DEF is isosceles right-angled at E and EG ⊥ FD. ∠DEF =

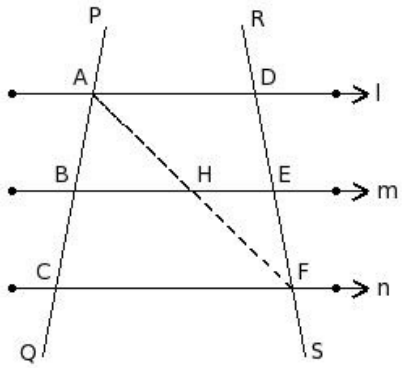


(i) ∠DEG (ii) ∠FGE (iii) ∠GDE (iv) ∠EFG (v) ∠GEF

In the given figure, three lines l , m and n are such that l ∥ m ∥ n.

12. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.

△FEH ~

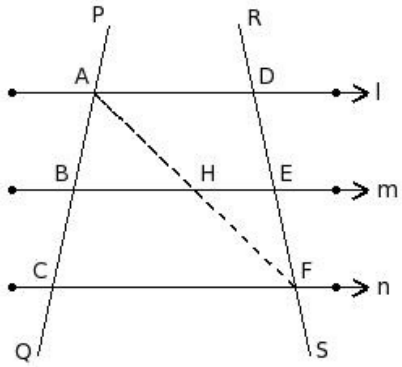


(i) △ABH (ii) △FDA (iii) △ACF (iv) △DAE (v) △DCF

In the given figure, three lines l , m and n are such that l ∥ m ∥ n.

13. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.

∠AFD =

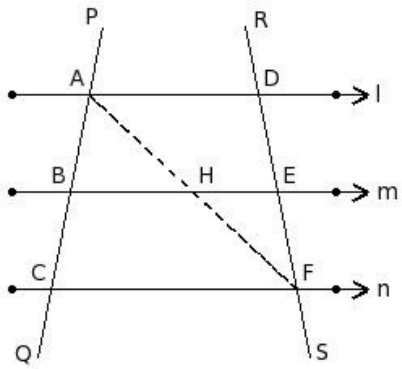


(i) ∠FDA (ii) ∠FEH (iii) ∠FAC (iv) ∠HFE (v) ∠HAB

In the given figure, three lines l , m and n are such that l ∥ m ∥ n.

14. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.

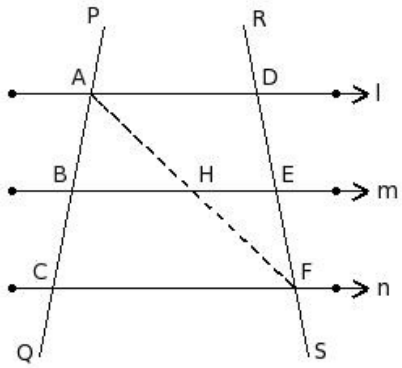
∠ACF =



(i) ∠FEH (ii) ∠EHF (iii) ∠DAF (iv) ∠FDA (v) ∠ABH

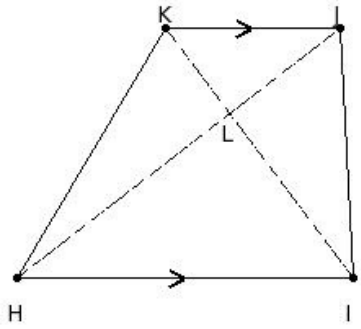
In the given figure, three lines l , m and n are such that l ∥ m ∥ n.

15. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.
∠DAF =



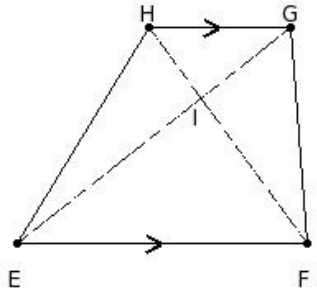
(i) ∠EHF (ii) ∠CFA (iii) ∠BHA (iv) ∠AFD (v) ∠HFE

16. In the given figure, HIJK is a trapezium in which
HI ∥ JK and the diagonals IK and HJ intersect at L.
If $LH=(7x+10)$ cm, $IL=(8x+8)$ cm, $LJ=(2x+15)$ cm and
$KL=(3x+3)$ cm, find the value of x



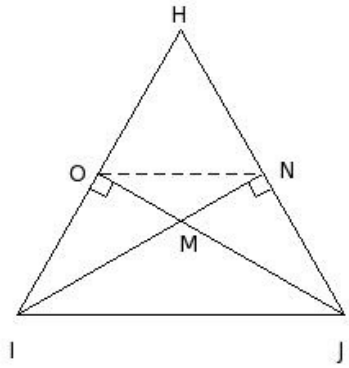
(i) (1,20) (ii) (18,-2) (iii) (18,-1) (iv) (21,-1) (v) (19,0)

17. In the given figure, EFGH is a trapezium in which
EF ∥ GH and the diagonals FH and EG intersect at I. △IEF ~



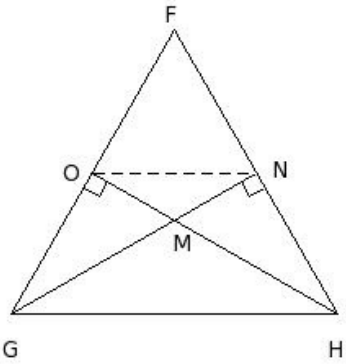
(i) △IHE (ii) △IFG (iii) △FGH (iv) △HEF (v) △IGH

18. In the given figure, the altitudes NI and JO of △HIJ meet at M. △OIM ~



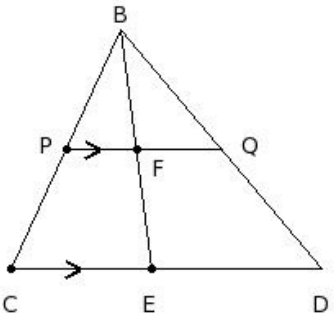
(i) △MON (ii) △MIJ (iii) △NJI (iv) △NJM (v) △OIJ

19. In the given figure, the altitudes NG and HO of △FGH meet at M. ∠OGM =



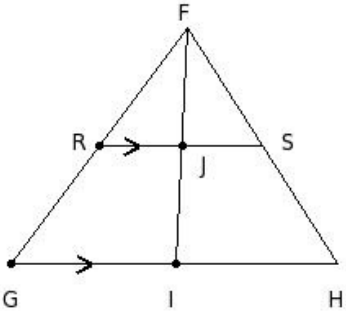
(i) ∠GMO (ii) ∠MHN (iii) ∠NMH (iv) ∠HNM (v) ∠MOG

20. In the given figure, PQ ∥ CD , and median BE bisects PQ.
If BC = 16 cm, BE = 16.1 cm and BP = 8 cm, FE =



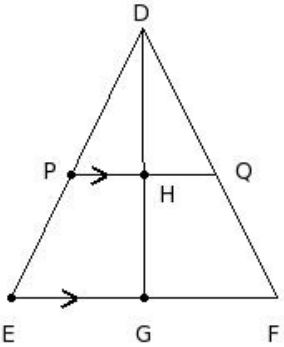
(i) 8.05 cm (ii) 6.05 cm (iii) 10.05 cm (iv) 9.05 cm (v) 7.05 cm

21. In the given figure, RS ∥ GH , and median FI bisects RS.
If FH = 17 cm, FJ = 7.2 cm and FS = 8.5 cm, FI =



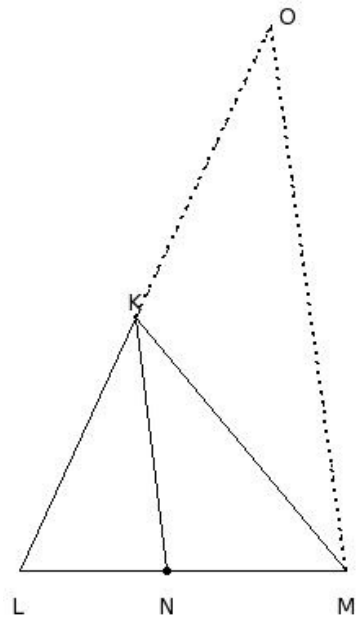
(i) 14.40 cm (ii) 15.40 cm (iii) 12.40 cm (iv) 16.40 cm (v) 13.40 cm

22. In the given figure, PQ ∥ EF , and median DG bisects PQ. △DHQ ~



(i) △DEG (ii) △DGF (iii) △DEF (iv) △DPH (v) △EFD

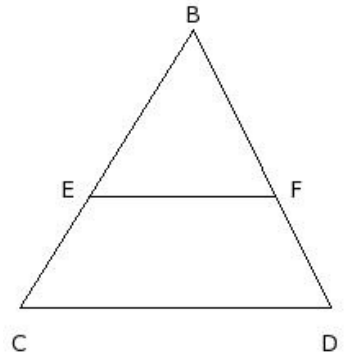
23. In the given figure, △KLM is a triangle in which KN is the internal bisector of ∠K and MO ∥ NK meeting LK produced at O . ∠KMO =



(i) ∠OKM (ii) ∠NMK (iii) ∠NKL (iv) ∠KNM (v) ∠LNK

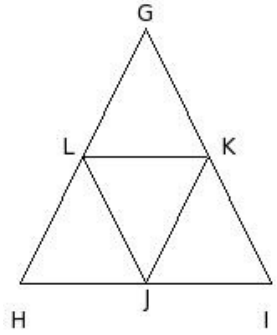
24. In the given figure, E and F are points on the sides BC and BD respectively of △BCD.For which of the following cases, EF ∥ CD

a) BE = 12 cm, EC = 8 cm, BF = 11.4 cm and FD = 7.6 cm
b) BC = 20 cm, EC = 8 cm, BD = 19 cm and BF = 11.4 cm
c) BC = 20 cm, BE = 14 cm, BD = 19 cm and FD = 7.6 cm
d) BC = 20 cm, EC = 8 cm, BF = 13.4 cm and BD = 19 cm



(i) {c,a} (ii) {c,b,a} (iii) {a,b} (iv) {c,d,a} (v) {d,b}

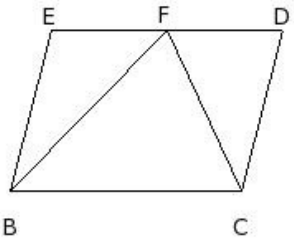
25. In the given figure, the area of the △GHI is x sq.cm. J,K,L are the mid-points of the sides HI , IG and GH respectively. The area of the △JKL is



(i) $\frac{3}{4}$ of area of △GHI (ii) $\frac{2}{3}$ of area of △GHI (iii) $\frac{1}{2}$ of area of △GHI (iv) $\frac{1}{4}$ of area of △GHI

(v) $\frac{1}{3}$ of area of △GHI

26. In the given figure, the parallelogram BCDE and the triangle △FBC are on the same bases and between the same parallels.
The area of the △FBC is x sq.cm. The area of the parallelogram is



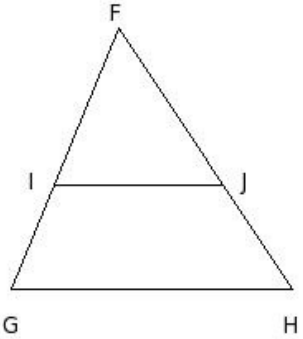
(i) $\frac{3}{2}$ the area of the triangle (ii) $\frac{5}{4}$ the area of the triangle (iii) thrice the area of the triangle

(iv) twice the area of the triangle (v) $\frac{4}{3}$ the area of the triangle

27. If the ratio of the bases of two triangles is M : N and the ratio of the corresponding heights is O : P , the ratio of their areas in the same order is

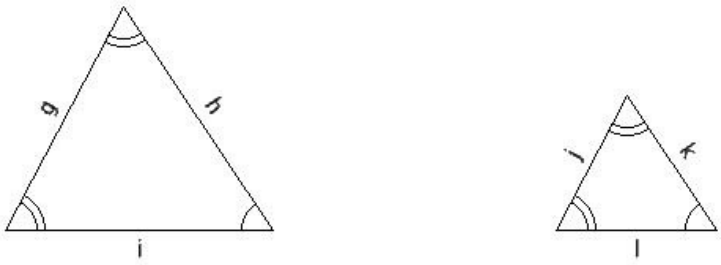
(i) NO : MP (ii) MO : NP (iii) MP : NO (iv) MN : OP (v) OP : MN

28. In the given △FGH, IJ ∥ GH. If FI : IG = 10.2 cm : 6.8 cm and FH = 19 cm, JH =



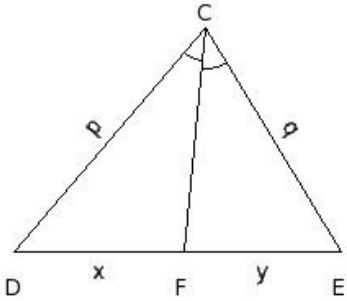
(i) 6.60 cm (ii) 9.60 cm (iii) 5.60 cm (iv) 8.60 cm (v) 7.60 cm

29. In the given two similar triangles, if g = 16 cm, h = 17 cm, i = 17 cm, l = 10.2 cm, find j



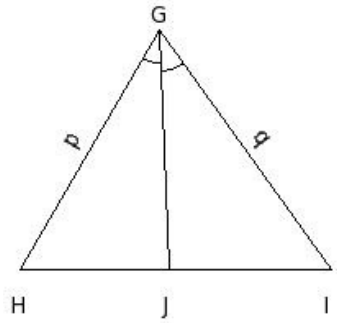
(i) 7.60 cm (ii) 8.60 cm (iii) 9.60 cm (iv) 11.60 cm (v) 10.60 cm

30. In the given figure, given ∠FCD = ∠ECF, x : y = 10.59 cm : 9.41 cm and p = 18 cm, find q =



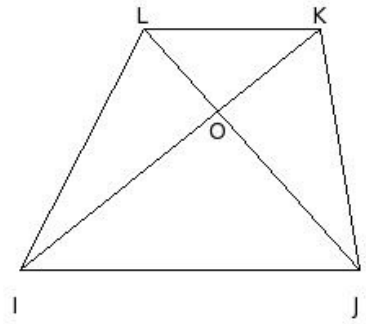
(i) 17.00 cm (ii) 16.00 cm (iii) 15.00 cm (iv) 14.00 cm (v) 18.00 cm

31. In the given figure, given ∠JGH = ∠IGJ, p = 9.23 cm, q = 9.77 cm and HI = 19 cm, find HJ =



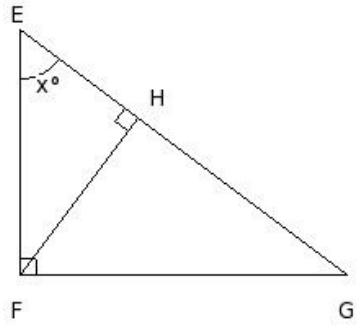
(i) 9.23 cm (ii) 7.23 cm (iii) 11.23 cm (iv) 8.23 cm (v) 10.23 cm

32. In the given figure, IJKL is a trapezium where OI = 15 cm , OJ = 15 cm and OL = 5 cm . Find OK =



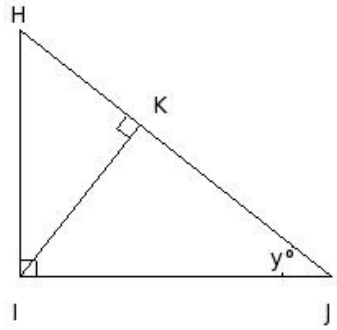
(i) 6 cm (ii) 3 cm (iii) 7 cm (iv) 4 cm (v) 5 cm

33. In the given figure, ∠EFH = 36.87°, find the value of x =



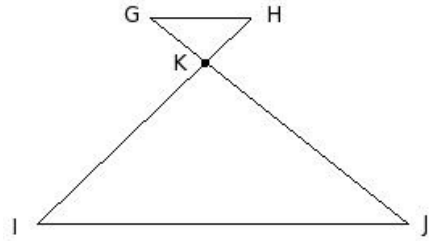
(i) 51.13° (ii) 54.13° (iii) 53.13° (iv) 55.13° (v) 52.13°

34. In the given figure, ∠KIJ = 51.57°, find the value of y =



(i) 36.43° (ii) 40.43° (iii) 38.43° (iv) 39.43° (v) 37.43°

35. In the given figure, if GH ∥ IJ then



(i) △KHG ~ △KJI (ii) △GHK ~ △KIJ (iii) △GHK ~ △KJI (iv) △KGH ~ △KIJ (v) △GHK ~ △JIK

36. In the given figure, △HIJ is right-angled at I. Also, IK ⊥ HJ. Which of the following are true?

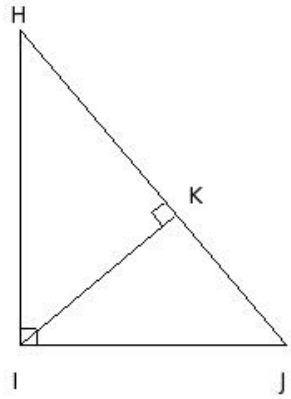
a) $IJ^2 = HJ \cdot HK$

b) $HI^2 = JH \cdot JK$

c) $IJ^2 = JH \cdot JK$

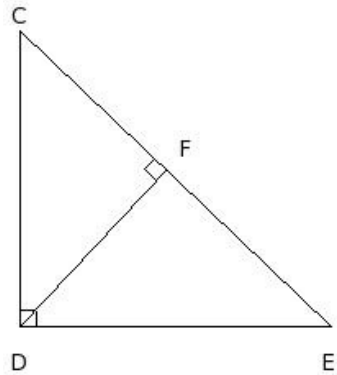
d) $IK^2 = HK \cdot KJ$

e) $HI^2 = HJ \cdot HK$



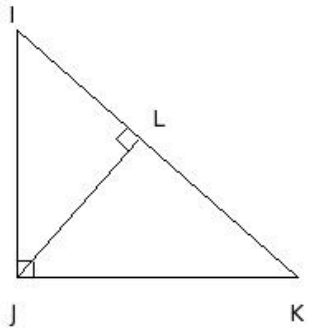
(i) {a,c} (ii) {b,d} (iii) {a,c,d} (iv) {c,d,e} (v) {a,b,e}

37. In the given figure, △CDE is right-angled at D. Also, DF ⊥ CE. If CD = 18 cm, DF = 13.07 cm, then find DE.



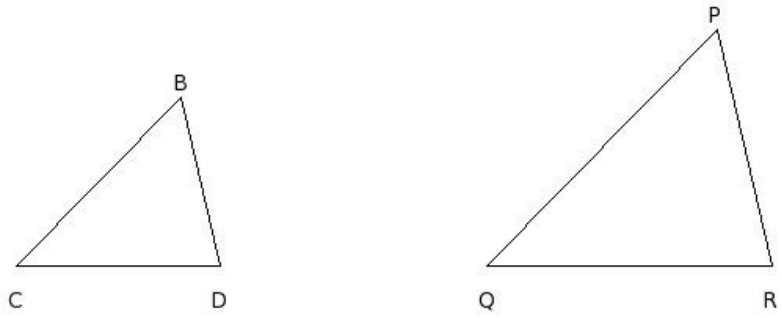
(i) 20.00 cm (ii) 18.00 cm (iii) 19.00 cm (iv) 21.00 cm (v) 17.00 cm

38. In the given figure, △IJK is right-angled at J. Also, JL ⊥ IK. If IL = 9.9 cm, LK = 12.8 cm, then find JL.



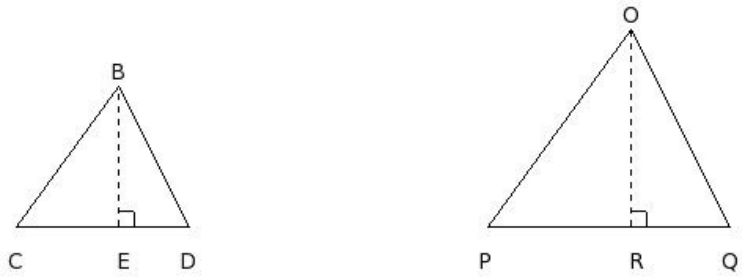
(i) 10.26 cm (ii) 13.26 cm (iii) 12.26 cm (iv) 11.26 cm (v) 9.26 cm

39. In the given figure, △BCD ~ △PQR and BC = 15 cm, PQ = 21 cm.
If the area of the △BCD = 69.63 sq.cm, find the area of the △PQR



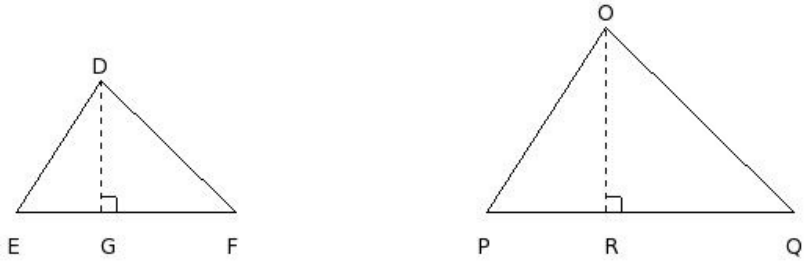
(i) 135.47 sq.cm (ii) 136.47 sq.cm (iii) 137.47 sq.cm (iv) 138.47 sq.cm (v) 134.47 sq.cm

40. In the given figure, △BCD ~ △OPQ and CD = 11 cm , PQ = 15.4 cm and
OR = 12.47 cm, find the area of the △BCD



(i) 46.99 sq.cm (ii) 47.99 sq.cm (iii) 50.99 sq.cm (iv) 49.99 sq.cm (v) 48.99 sq.cm

41. In the given figure, △DEF & △OPQ are similar triangles. If the ratio of the heights DG : OR = 8 : 12, then the ratio of their areas is



(i) 64 sq.cm : 141 sq.cm (ii) 63 sq.cm : 144 sq.cm (iii) 64 sq.cm : 147 sq.cm (iv) 64 sq.cm : 144 sq.cm

(v) 65 sq.cm : 144 sq.cm

42. In the given figure, points H , I and J are the mid-points of sides FG, GE and EF of △EFG. Which of the following are true?

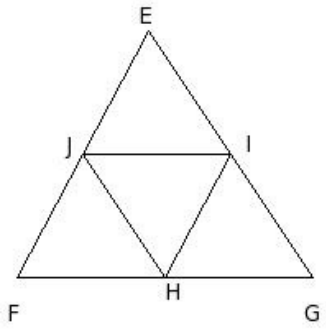
a) Area of △EFG = 4 times area of △HIJ

b) Area of trapezium FGIJ is $\frac{1}{4}$ the area of △EFG

c) Area of △EFG = $\frac{1}{3}$ area of △HIJ

d) All four small triangles have equal areas

e) Area of trapezium FGIJ is thrice the area of △EJI



(i) {b,c,e} (ii) {b,a,d} (iii) {b,a} (iv) {c,d} (v) {a,d,e}

43. In the given figure, points F , G and H are the mid-points of sides DE, EC and CD of △CDE. Which of the following are true?

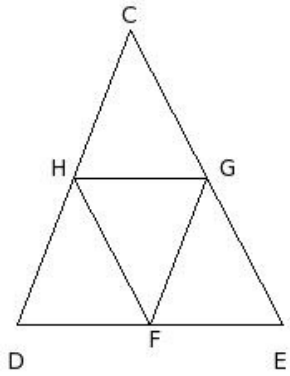
a) △GFE ~ △CDE

b) △HDF ~ △CDE

c) △FHG ~ △CDE

d) △FGH ~ △CDE

e) △CHG ~ △CDE

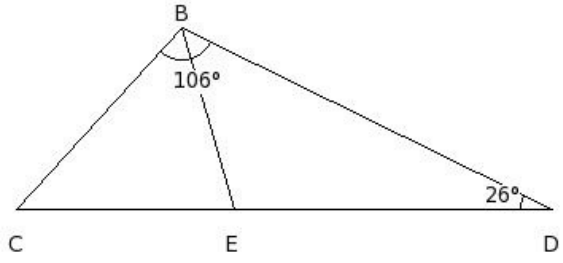


(i) {a,b,d,e} (ii) {c,e,a} (iii) {c,b} (iv) {c,a} (v) {c,d}

44. The perimeters of two similar triangles are 29 cm and 21 cm respectively. If one side of the first triangle is 16 cm, find the length of the corresponding side of the second triangle.

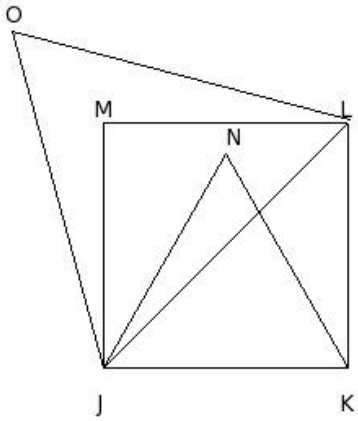
(i) 13.59 cm (ii) 10.59 cm (iii) 11.59 cm (iv) 12.59 cm (v) 9.59 cm

45. In the given figure, E is a point on side CD of △BCD such that ∠DBC = ∠BED = 106° , ∠EDB = 26°. Find ∠DBE



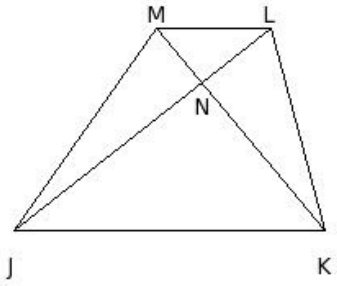
(i) 50° (ii) 46° (iii) 49° (iv) 48° (v) 47°

46. JKLM is a square and △JKN is an equilateral triangle. Also, △JLO is an equilateral triangle. If area of △JKN is 'a' sq.units, then the area of △JLO is



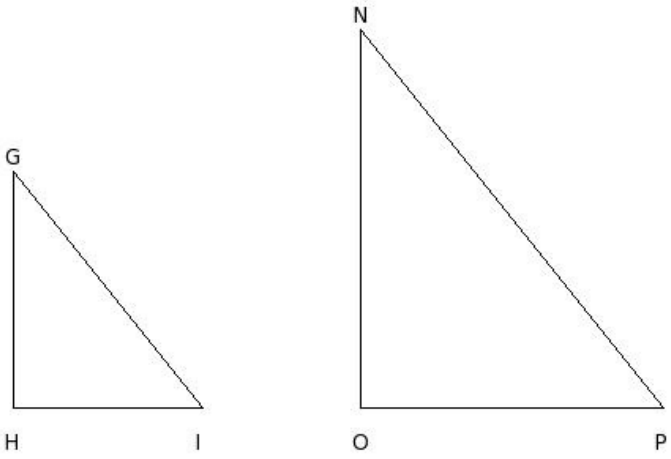
(i) a^2 sq.units (ii) $\frac{1}{2}$ a sq.units (iii) $\sqrt{3}$ a sq.units (iv) 2a sq.units (v) $\frac{1}{2}\sqrt{3}$ a sq.units

47. JKLM is a cyclic trapezium. Diagonals KM and JL intersect at N. If MJ = 15 cm, find KL



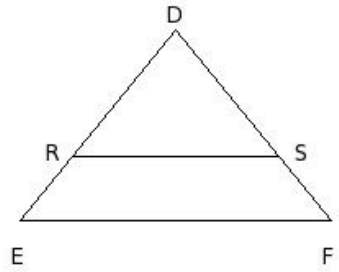
(i) 15 cm (ii) 17 cm (iii) 13 cm (iv) 16 cm (v) 14 cm

A vertical stick 15 m long casts a shadow of 12 m long on the ground.
48. At the same time, a tower casts the shadow 96 m long on the ground.
Find the height of the tower.



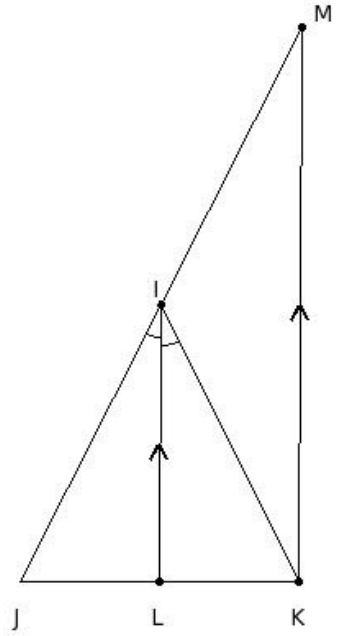
(i) 120 m (ii) 118 m (iii) 119 m (iv) 121 m (v) 122 m

49. In the given figure, $\triangle DEF$, RS ∥ EF such that area of $\triangle DRS$ = area of RSFE. Find $\frac{DR}{DE}$



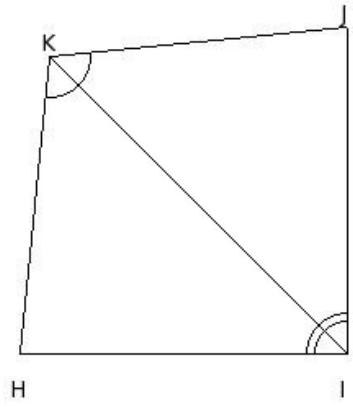
(i) $\frac{1}{2}\sqrt{\frac{1}{2}}$ (ii) $\frac{1}{2}\sqrt{2}$ (iii) $\frac{1}{2}\sqrt{\frac{4}{2}}$ (iv) 1 (v) $\frac{1}{2}\sqrt{4}$

50. In the given figure, ∠LIJ = ∠KIL and IL ∥ MK and IJ = 19 cm, JL = 9 cm and LK = 9 cm. Find IM



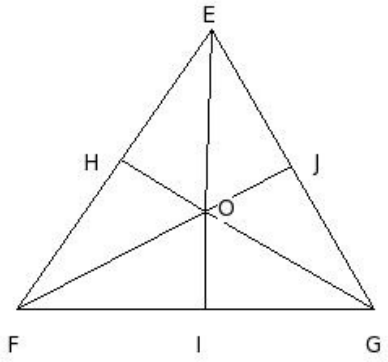
(i) 17.00 cm (ii) 19.00 cm (iii) 20.00 cm (iv) 21.00 cm (v) 18.00 cm

51. In the given figure, IK is the angular bisector of ∠I & ∠K
HI = 20 cm, IJ = 20 cm and JK = 18 cm. Find KH



(i) 18.00 cm (ii) 17.00 cm (iii) 20.00 cm (iv) 16.00 cm (v) 19.00 cm

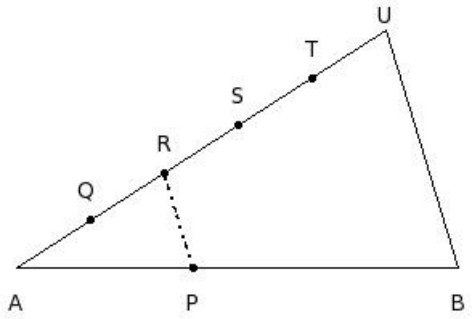
52. In the given figure, EFG is a triangle and 'O' is a point inside △EFG. The angular bisector of ∠FOE, ∠GOF & ∠EOG meet EF, FG & GE at H, I & J respectively . Then



(i) EH . FI . GJ = EF . FG . GE (ii) EH . FI . GJ = HF . IG . JE (iii) EH . FI . GJ = HI . IJ . JH

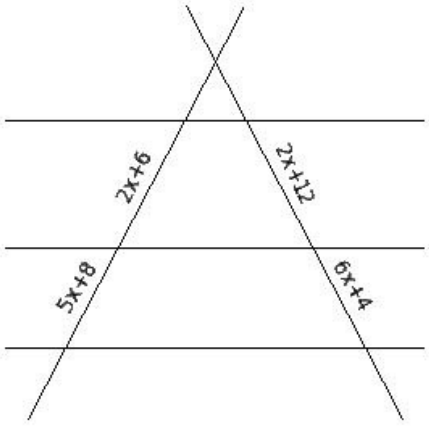
(iv) EH . FI . GJ = OE . OF . OG (v) EH . FI . GJ = OH . OI . OJ

53. In the given figure, if A, Q, R, S, T, U are equidistant and RP ∥ UB and AB = 28 cm. Find AP



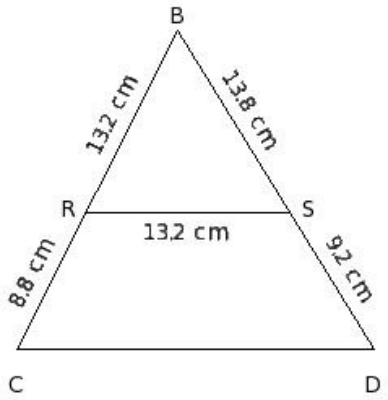
(i) 11.20 cm (ii) 12.20 cm (iii) 9.20 cm (iv) 10.20 cm (v) 13.20 cm

54. From the given figure and values, find x



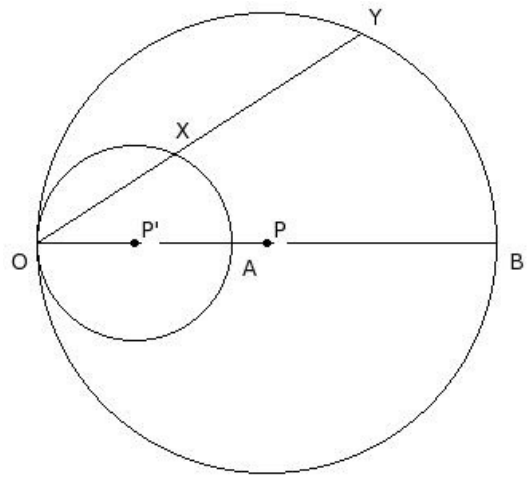
(i) (-1,19) (ii) (-2,17) (iii) (1,18) (iv) (20,0) (v) (-2,18)

55. If the measures are as shown in the given figure, find CD



(i) 23.0 cm (ii) 24.0 cm (iii) 21.0 cm (iv) 20.0 cm (v) 22.0 cm

56. In the given figure, the two circles touch each other internally.
Diameter OB passes through the centre of the smaller circle.
$OX = 10$ cm, $OY = 24$ cm and radius of the inner circle is 6.1 cm.
Find the radius of the outer circle.



(i) 14.64 cm (ii) 12.64 cm (iii) 15.64 cm (iv) 16.64 cm (v) 13.64 cm

Assignment Key

1) (ii)	2) (ii)	3) (iv)	4) (iii)	5) (i)	6) (iii)
7) (iv)	8) (i)	9) (v)	10) (iii)	11) (ii)	12) (ii)
13) (iv)	14) (v)	15) (i)	16) (iii)	17) (v)	18) (iv)
19) (ii)	20) (i)	21) (i)	22) (ii)	23) (iii)	24) (iii)
25) (iv)	26) (iv)	27) (ii)	28) (v)	29) (iii)	30) (ii)
31) (i)	32) (v)	33) (iii)	34) (iii)	35) (v)	36) (iv)
37) (iii)	38) (iv)	39) (ii)	40) (v)	41) (iv)	42) (v)
43) (i)	44) (iii)	45) (iv)	46) (iv)	47) (i)	48) (i)
49) (ii)	50) (ii)	51) (i)	52) (ii)	53) (i)	54) (v)
55) (v)	56) (i)				