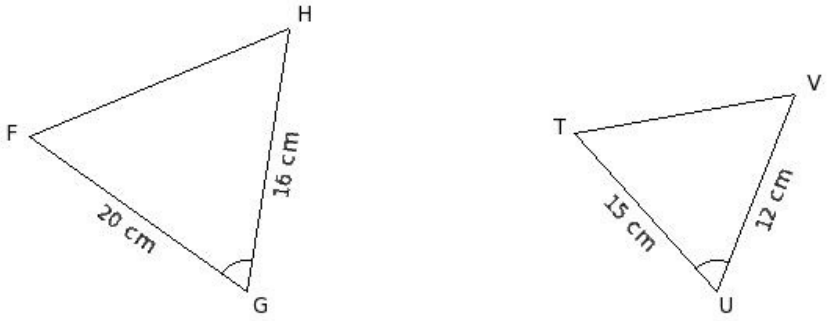
EduSahara™ Assignment

Name : Similarity of Triangles

Chapter : Similarity of Triangles

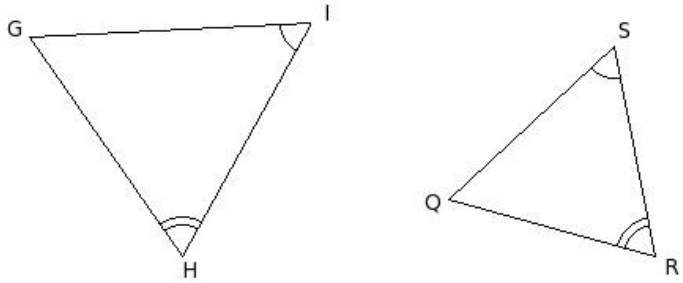
Grade : ICSE Grade X

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



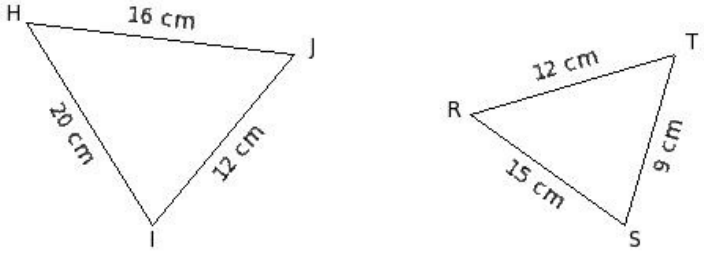
(i) SAS Similarity (ii) not similar (iii) AAA Similarity (iv) SSS Similarity

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



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

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

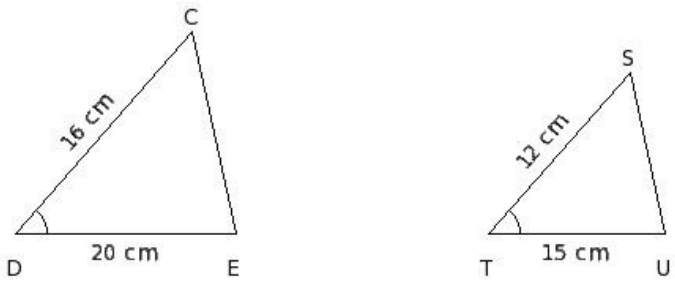


(i) SSS Similarity (ii) not similar (iii) AAA Similarity (iv) SAS Similarity

In the given figure, $\triangle CDE$ and $\triangle STU$ are such that

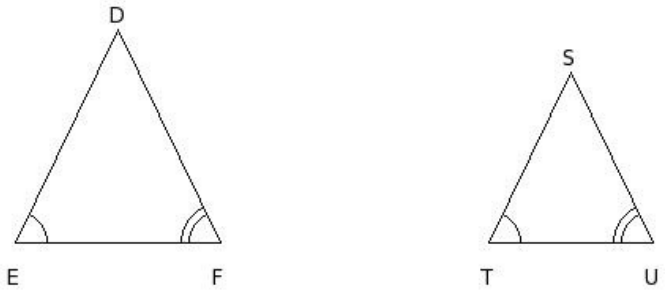
4. $\angle D = \angle T$ and $\frac{CD}{ST} = \frac{DE}{TU}$.

Identify the property by which the two triangles are similar



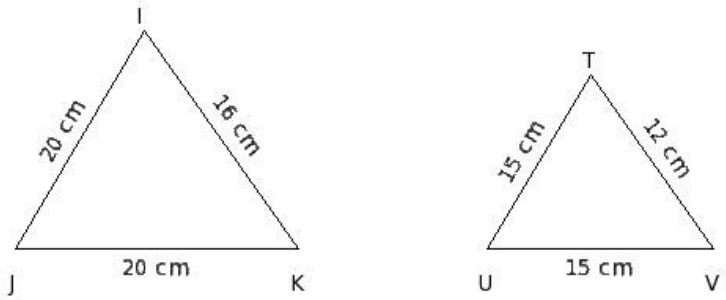
(i) not similar (ii) SSS Similarity (iii) SAS Similarity (iv) AAA Similarity

5. In the given figure, $\triangle DEF$ and $\triangle STU$ are such that
$\angle E = \angle T$ and $\angle F = \angle U$.
Identify the property by which the two triangles are similar



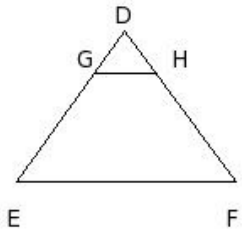
(i) not similar (ii) SSS Similarity (iii) AAA Similarity (iv) SAS Similarity

6. In the given figure, $\triangle IJK$ and $\triangle TUV$ are such that
$\frac{IJ}{TU} = \frac{JK}{UV} = \frac{KI}{VT}$.
Identify the property by which the two triangles are similar



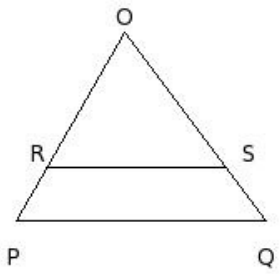
(i) SAS Similarity (ii) not similar (iii) SSS Similarity (iv) AAA Similarity

7. In the given figure, $GH \parallel EF$. If $\frac{DG}{GE} = \frac{2}{5}$ and $DF = 11.4$ cm, find DH



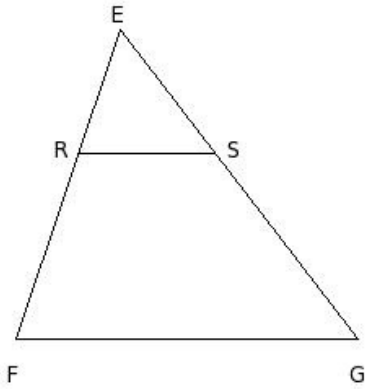
(i) 3.26 cm (ii) 1.26 cm (iii) 2.26 cm (iv) 5.26 cm (v) 4.26 cm

8. In the given figure, $RS \parallel PQ$.
If $OR = 9.86$ cm, $OP = 13.8$ cm and $OQ = 14.8$ cm, find OS



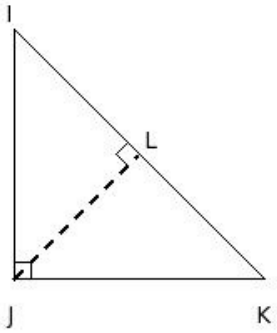
(i) 8.57 cm (ii) 10.57 cm (iii) 9.57 cm (iv) 11.57 cm (v) 12.57 cm

9. In the given figure, RS ∥ FG and ES = 14.4 cm, EG = 24 cm and FG = 21 cm, find RS



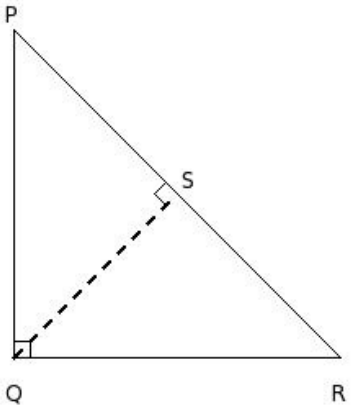
(i) 12.6 cm (ii) 10.6 cm (iii) 11.6 cm (iv) 14.6 cm (v) 13.6 cm

10. In the given figure, △IJK is isosceles right-angled at J and JL ⊥ KI. ∠I =



(i) ∠K (ii) ∠N (iii) ∠L (iv) ∠J (v) ∠M

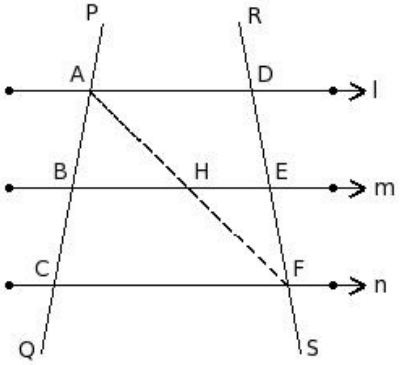
11. In the given figure, △PQR is isosceles right-angled at Q and QS ⊥ RP. ∠QRS ≠



(i) ∠SPQ (ii) ∠SQR (iii) ∠PQS (iv) ∠RPQ (v) ∠RSQ

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.
△ACF ~

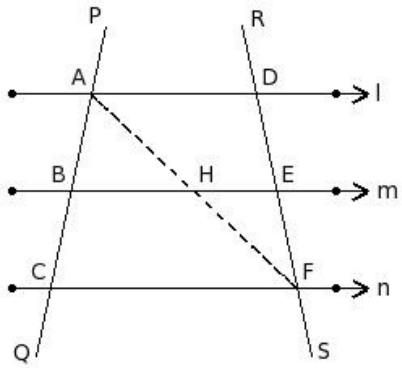


(i) △FDA (ii) △FEH (iii) △DCF (iv) △ABH (v) △DAE

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 =

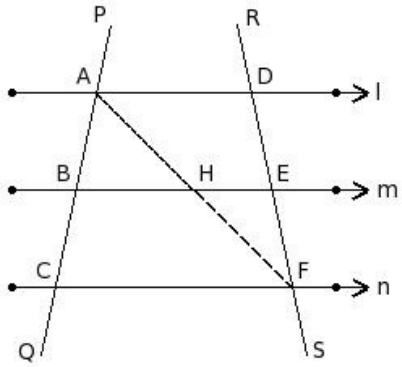


(i) ∠FEH (ii) ∠FDA (iii) ∠HAB (iv) ∠FAC (v) ∠HFE

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.

∠ABH =

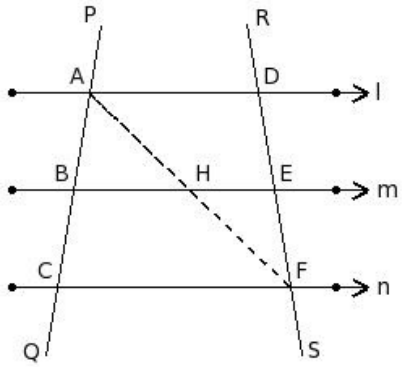


(i) ∠ACF (ii) ∠DAF (iii) ∠EHF (iv) ∠FEH (v) ∠FDA

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

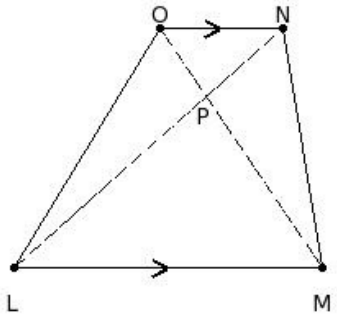
15. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.

∠DAF =



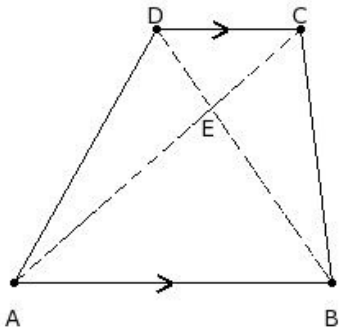
(i) ∠CFA (ii) ∠AFD (iii) ∠HFE (iv) ∠BHA (v) ∠EHF

16. In the given figure, LMNO is a trapezium in which LM ∥ NO and the diagonals MO and LN intersect at P. If PL = (6x+8) cm, MP = (10x+8) cm, PN = (x+8) cm and OP = (2x+8) cm, find the value of x



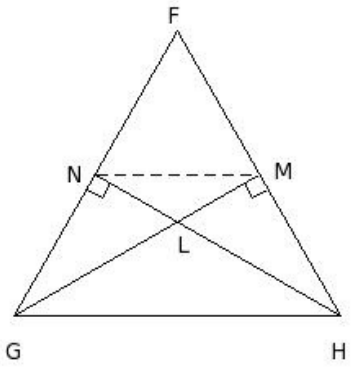
(i) (2,12) (ii) (0,12) (iii) (0,11) (iv) (14,2) (v) (1,13)

17. In the given figure, ABCD is a trapezium in which AB ∥ CD and the diagonals BD and AC intersect at E. △ECD ~



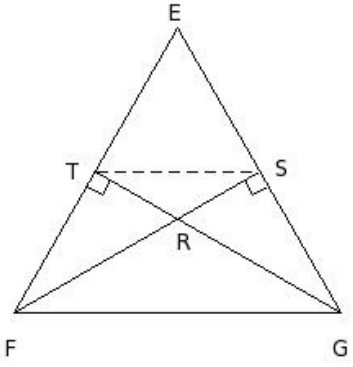
(i) △EDA (ii) △EBC (iii) △DAB (iv) △BCD (v) △EAB

18. In the given figure, the altitudes MG and HN of △FGH meet at L. △LGH ~



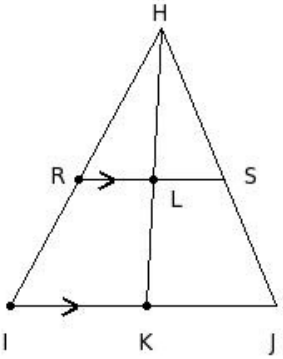
(i) △MHG (ii) △LNM (iii) △NGH (iv) △NGL (v) △MHL

19. In the given figure, the altitudes SF and GT of △EFG meet at R. ∠TFR =



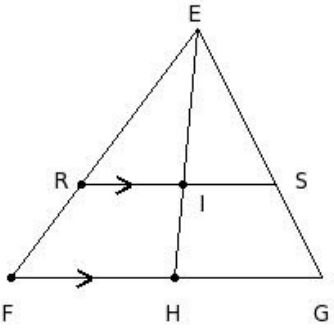
(i) ∠SRG (ii) ∠RGS (iii) ∠FRT (iv) ∠GSR (v) ∠RTF

20. In the given figure, RS ∥ IJ , and median HK bisects RS.
If HK = 19 cm, HR = 10.36 cm and HL = 10.36 cm, HI =



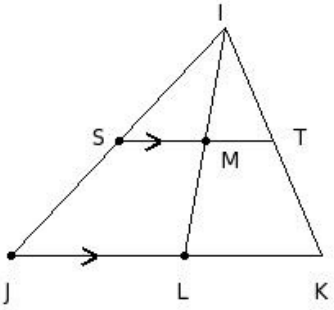
(i) 18.00 cm (ii) 17.00 cm (iii) 19.00 cm (iv) 21.00 cm (v) 20.00 cm

21. In the given figure, RS ∥ FG , and median EH bisects RS.
If EH = 15.3 cm, EG = 17 cm and ES = 10.62 cm, EI =



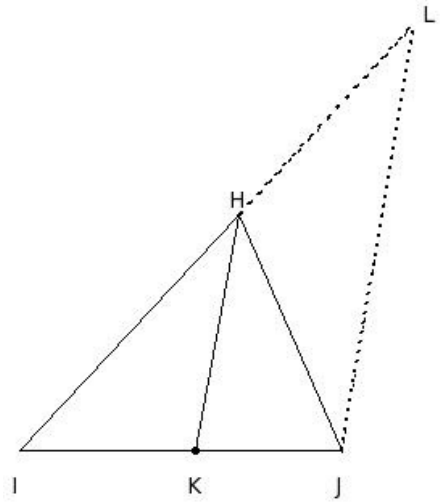
(i) 9.56 cm (ii) 10.56 cm (iii) 7.56 cm (iv) 11.56 cm (v) 8.56 cm

22. In the given figure, ST ∥ JK , and median IL bisects ST. △ISM ~



(i) △ILK (ii) △IJL (iii) △IJK (iv) △IMT (v) △JKI

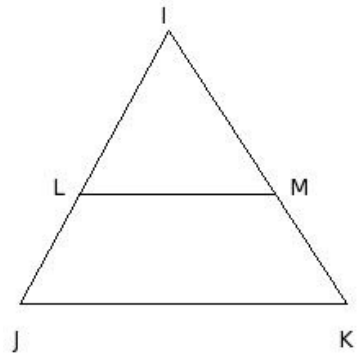
23. In the given figure, △HIJ is a triangle in which HK is the internal bisector of ∠H and JL ∥ KH meeting IH produced at L . ∠KHI =



(i) ∠HKJ (ii) ∠HJL (iii) ∠KJH (iv) ∠LHJ (v) ∠IKH

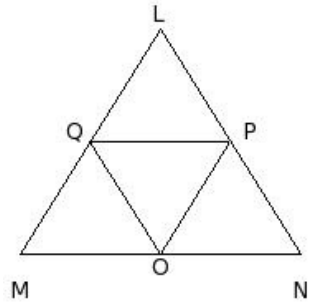
24. In the given figure, L and M are points on the sides IJ and IK respectively of △IJK.For which of the following cases, LM ∥ JK

a) IJ = 19 cm, IL = 13.4 cm, IK = 20 cm and MK = 8 cm
b) IJ = 19 cm, LJ = 7.6 cm, IM = 14 cm and IK = 20 cm
c) IL = 11.4 cm, LJ = 7.6 cm, IM = 12 cm and MK = 8 cm
d) IJ = 19 cm, LJ = 7.6 cm, IK = 20 cm and IM = 12 cm



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

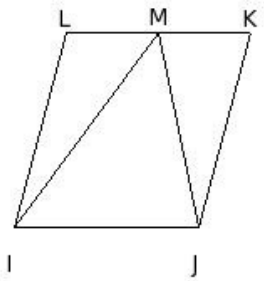
25. In the given figure, the area of the △LMN is x sq.cm. O,P,Q are the mid-points of the sides MN , NL and LM respectively. The area of the △OPQ is



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

(v) $\frac{2}{3}$ of area of △LMN

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



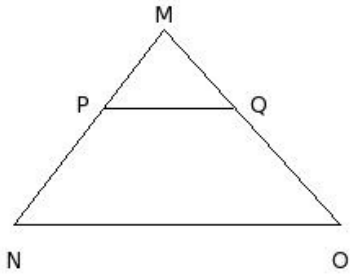
(i) thrice the area of the triangle (ii) $\frac{3}{2}$ the area of the triangle (iii) $\frac{4}{3}$ the area of the triangle

(iv) twice the area of the triangle (v) $\frac{5}{4}$ the area of the triangle

27. If the ratio of the bases of two triangles is H : I and the ratio of the corresponding heights is J : K , the ratio of their areas in the same order is

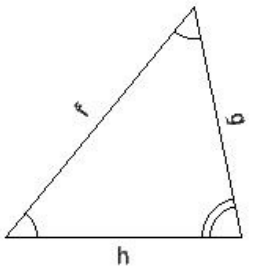
(i) HI : JK (ii) HK : IJ (iii) HJ : IK (iv) IJ : HK (v) JK : HI

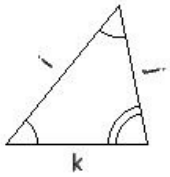
28. In the given △MNO, PQ ∥ NO. If MP : PN = 6 cm : 9 cm and MO = 16 cm, QO =



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

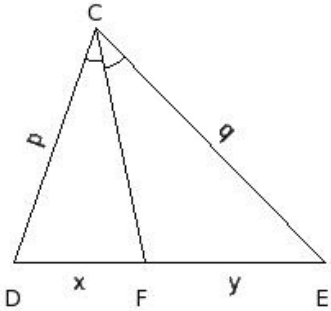
29. In the given two similar triangles, if f = 19 cm, g = 15 cm, h = 15 cm, i = 11.4 cm, find j





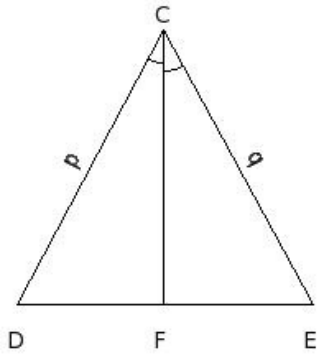
(i) 11.00 cm (ii) 7.00 cm (iii) 8.00 cm (iv) 9.00 cm (v) 10.00 cm

30. In the given figure, given ∠FCD = ∠ECF, x : y = 8.14 cm : 10.86 cm and p = 15 cm, find q =



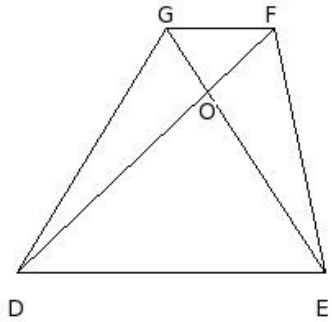
(i) 19.00 cm (ii) 22.00 cm (iii) 20.00 cm (iv) 21.00 cm (v) 18.00 cm

31. In the given figure, given ∠FCD = ∠ECF, p = 9 cm, q = 9 cm and DE = 18 cm, find DF =



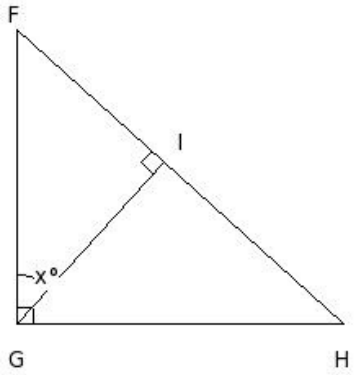
(i) 7.00 cm (ii) 9.00 cm (iii) 8.00 cm (iv) 11.00 cm (v) 10.00 cm

32. In the given figure, DEFG is a trapezium where OE = 13 cm , OF = 4 cm and OG = 4 cm . Find OD =



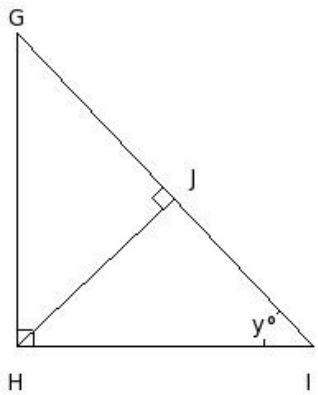
(i) 15 cm (ii) 11 cm (iii) 12 cm (iv) 13 cm (v) 14 cm

33. In the given figure, ∠IFG = 48.02°, find the value of x =



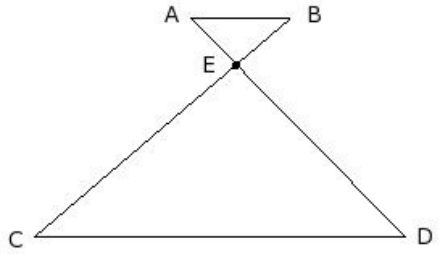
(i) 42.98° (ii) 41.98° (iii) 39.98° (iv) 40.98° (v) 43.98°

34. In the given figure, ∠JHI = 43.15°, find the value of y =



(i) 46.85° (ii) 47.85° (iii) 48.85° (iv) 44.85° (v) 45.85°

35. In the given figure, if AB ∥ CD then



(i) △EAB ~ △ECD (ii) △ABE ~ △ECD (iii) △EBA ~ △EDC (iv) △ABE ~ △EDC (v) △ABE ~ △DCE

36. In the given figure, △IJK is right-angled at J. Also, JL ⊥ IK. Which of the following are true?

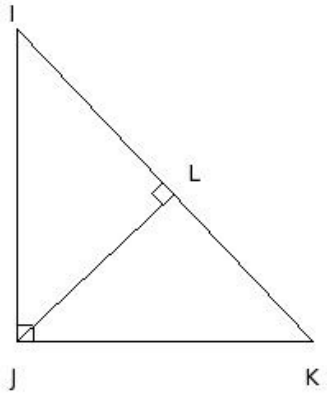
a) $JK^2 = KI \cdot KL$

b) $JK^2 = IK \cdot IL$

c) $IJ^2 = IK \cdot IL$

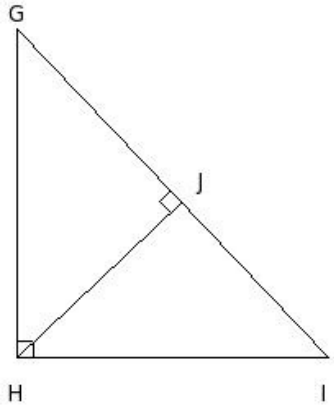
d) $IJ^2 = KI \cdot KL$

e) $JL^2 = IL \cdot LK$



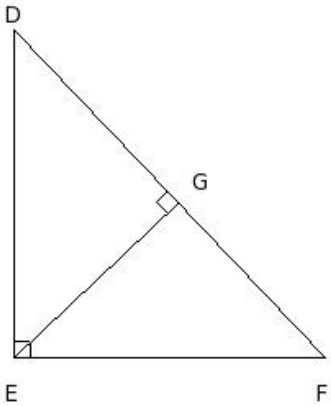
(i) {a,c,e} (ii) {b,d,e} (iii) {b,a} (iv) {b,a,c} (v) {d,c}

37. In the given figure, △GHI is right-angled at H. Also, HJ ⊥ GI. If GH = 20 cm, HJ = 13.77 cm, then find HI.



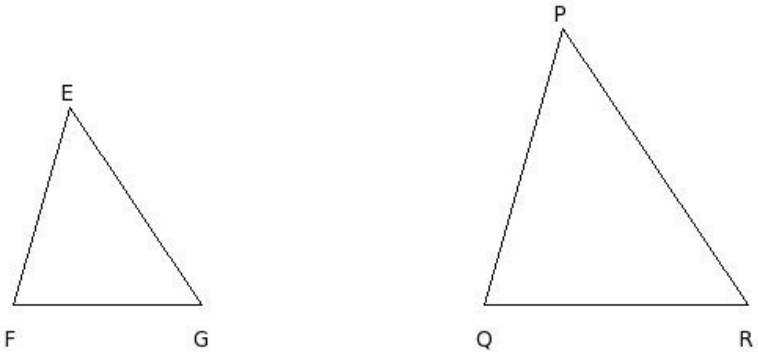
(i) 20.00 cm (ii) 21.00 cm (iii) 17.00 cm (iv) 18.00 cm (v) 19.00 cm

38. In the given figure, △DEF is right-angled at E. Also, EG ⊥ DF. If DG = 14.6 cm, EG = 13.78 cm, then find GF.



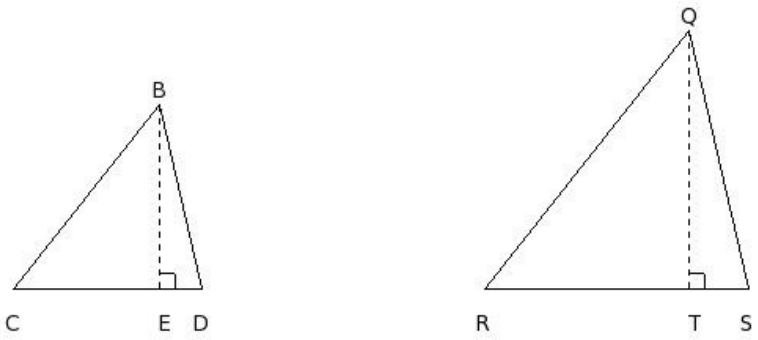
(i) 14.00 cm (ii) 11.00 cm (iii) 15.00 cm (iv) 13.00 cm (v) 12.00 cm

39. In the given figure, △EFG ~ △PQR and EF = 13 cm, PQ = 18.2 cm.
If the area of the △PQR = 146.67 sq.cm, find the area of the △EFG



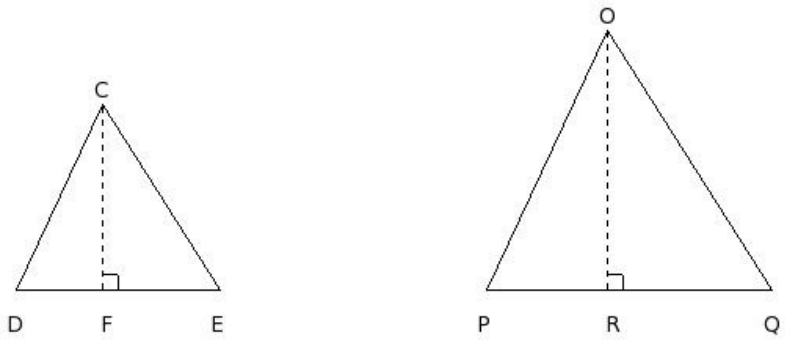
(i) 73.83 sq.cm (ii) 75.83 sq.cm (iii) 72.83 sq.cm (iv) 74.83 sq.cm (v) 76.83 sq.cm

40. In the given figure, △BCD ~ △QRS and CD = 12 cm , RS = 16.8 cm and
BE = 11.71 cm, find the area of the △QRS



(i) 137.70 sq.cm (ii) 138.70 sq.cm (iii) 136.70 sq.cm (iv) 135.70 sq.cm (v) 139.70 sq.cm

41. In the given figure, △CDE & △OPQ are similar triangles. If the ratio of the heights CF : OR = 12 : 17, then the ratio of their areas is



(i) 145 sq.cm : 289 sq.cm (ii) 144 sq.cm : 289 sq.cm (iii) 143 sq.cm : 289 sq.cm (iv) 144 sq.cm : 286 sq.cm

(v) 144 sq.cm : 292 sq.cm

42. In the given figure, points P , Q and R are the mid-points of sides NO, OM and MN of △MNO. Which of the following are true?

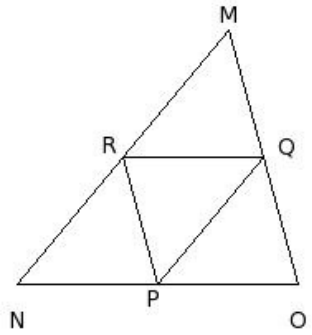
a) All four small triangles have equal areas

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

c) Area of △MNO = $\frac{1}{3}$ area of △PQR

d) Area of trapezium NOQR is thrice the area of △MRQ

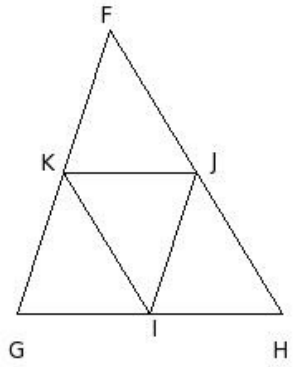
e) Area of △MNO = 4 times area of △PQR



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

43. In the given figure, points I , J and K are the mid-points of sides GH, HF and FG of △FGH. Which of the following are true?

a) △IKJ ~ △FGH
b) △IJK ~ △FGH
c) △FKJ ~ △FGH
d) △JIH ~ △FGH
e) △KGI ~ △FGH

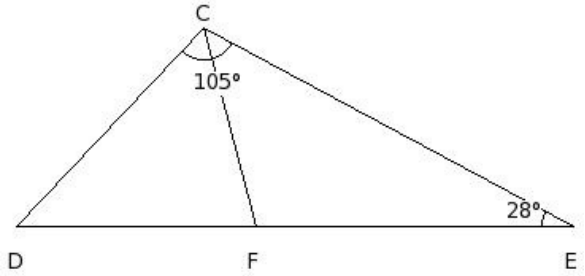


(i) {a,e,b} (ii) {a,c} (iii) {a,b} (iv) {b,c,d,e} (v) {a,d}

44. The perimeters of two similar triangles are 29 cm and 24 cm respectively. If one side of the first triangle is 12 cm, find the length of the corresponding side of the second triangle.

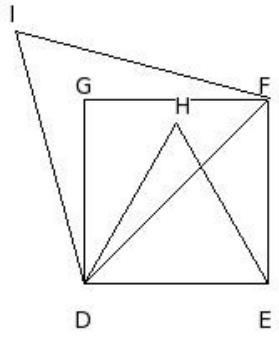
(i) 8.93 cm (ii) 7.93 cm (iii) 10.93 cm (iv) 11.93 cm (v) 9.93 cm

45. In the given figure, F is a point on side DE of △CDE such that ∠ECD = ∠CFE = 105° , ∠FEC = 28°. Find ∠ECF



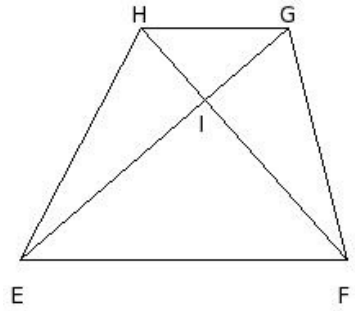
(i) 46° (ii) 49° (iii) 45° (iv) 48° (v) 47°

46. DEFG is a square and △DEH is an equilateral triangle. Also, △DFI is an equilateral triangle. If area of △DEH is 'a' sq.units, then the area of △DFI is



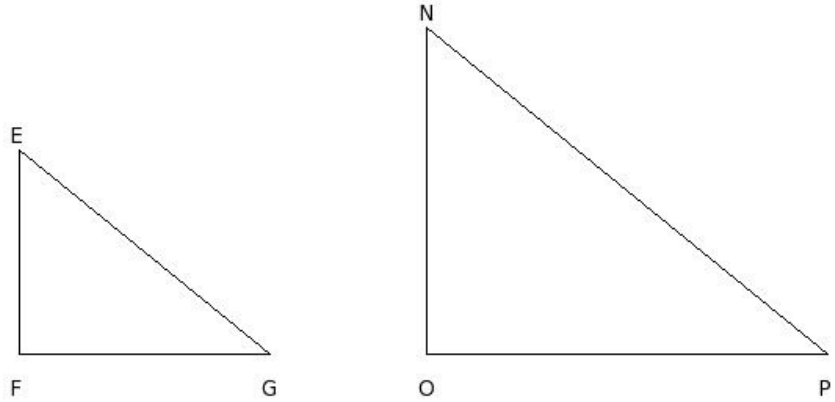
(i) $\frac{1}{2}\sqrt{3}$ a sq.units (ii) a^2 sq.units (iii) $\sqrt{3}$ a sq.units (iv) 2a sq.units (v) $\frac{1}{2}$ a sq.units

47. EFGH is a cyclic trapezium. Diagonals FH and EG intersect at I. If HE = 16 cm, find FG



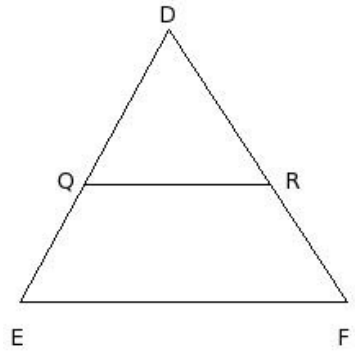
(i) 16 cm (ii) 18 cm (iii) 17 cm (iv) 14 cm (v) 15 cm

A vertical stick 13 m long casts a shadow of 16 m long on the ground.
48. At the same time, a tower casts the shadow 128 m long on the ground.
Find the height of the tower.



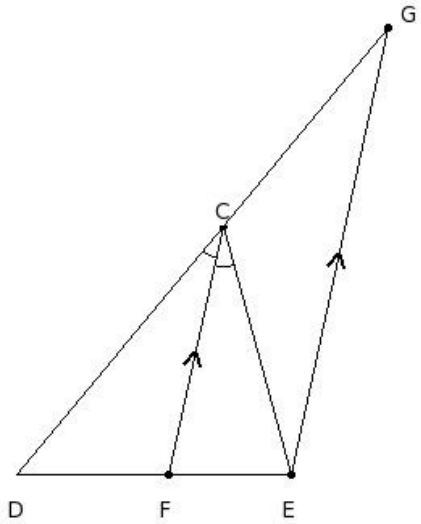
(i) 102 m (ii) 104 m (iii) 103 m (iv) 105 m (v) 106 m

In the given figure, △DEF, QR ∥ EF such that
49. area of △DQR = area of QRFE. Find $\frac{DQ}{DE}$



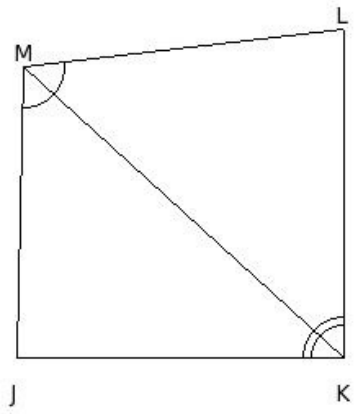
(i) $\frac{1}{2}\sqrt{5}$ (ii) $\frac{1}{2}\sqrt{2}$ (iii) 1 (iv) $\frac{1}{2}\sqrt{-1}$ (v) $\frac{1}{2}\sqrt{4}$

50. In the given figure, ∠FCD = ∠ECF and CF ∥ GE and CD = 20 cm, DF = 9 cm and FE = 8 cm. Find CG



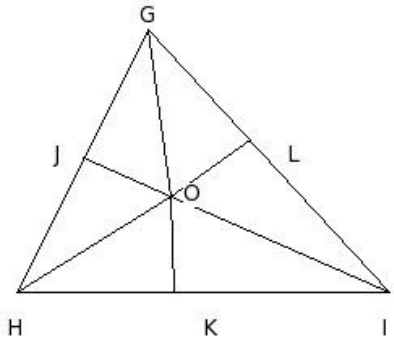
(i) 18.78 cm (ii) 15.78 cm (iii) 16.78 cm (iv) 19.78 cm (v) 17.78 cm

51. In the given figure, KM is the angular bisector of ∠K & ∠M
JK = 20 cm, KL = 20 cm and LM = 20 cm. Find MJ



(i) 20.00 cm (ii) 21.00 cm (iii) 19.00 cm (iv) 22.00 cm (v) 18.00 cm

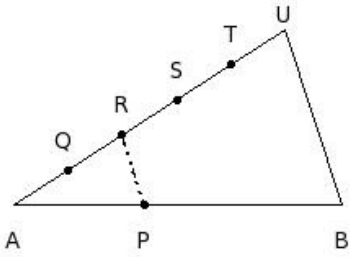
52. In the given figure, GHI is a triangle and 'O' is a point inside △GHI. The angular bisector of ∠HOG, ∠IOH & ∠GOI meet GH, HI & IG at J, K & L respectively . Then



(i) GJ . HK . IL = OJ . OK . OL (ii) GJ . HK . IL = OG . OH . OI (iii) GJ . HK . IL = JK . KL . LJ

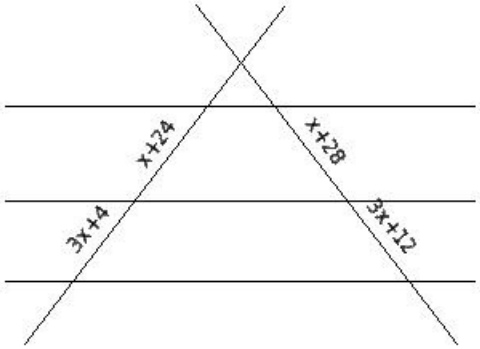
(iv) GJ . HK . IL = JH . KI . LG (v) GJ . HK . IL = GH . HI . IG

53. In the given figure, if A, Q, R, S, T, U are equidistant and RP ∥ UB and AB = 20 cm and AP = 8 cm. Find PB



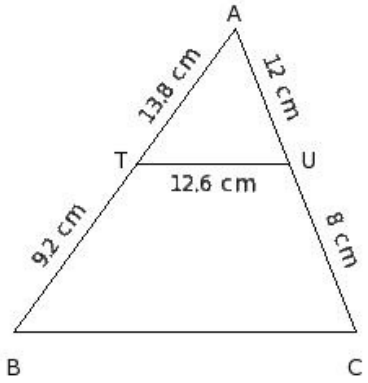
(i) 13.00 cm (ii) 12.00 cm (iii) 11.00 cm (iv) 14.00 cm (v) 10.00 cm

54. From the given figure and values, find x



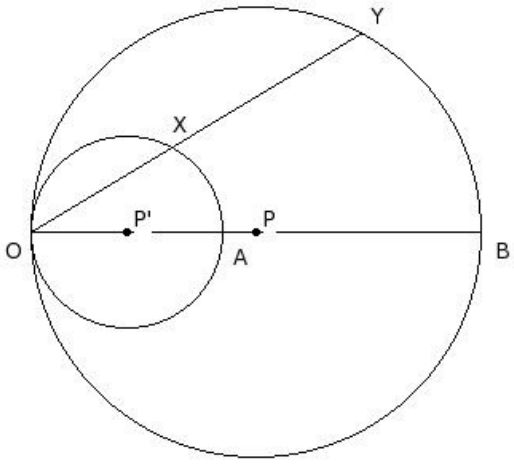
(i) (44,44) (ii) (45,45) (iii) (44,43) (iv) (46,46) (v) (47,44)

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



(i) 22.0 cm (ii) 21.0 cm (iii) 19.0 cm (iv) 23.0 cm (v) 20.0 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 cm.
Find the radius of the outer circle.



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

Assignment Key

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