EduSahara™ Assignment

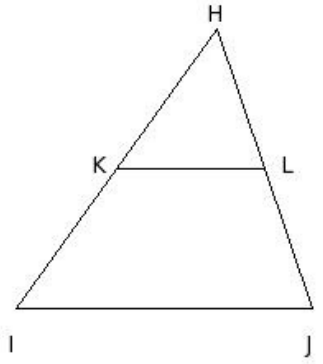
Name : Similarity of Triangles

Chapter : Triangles

Grade : CBSE Grade X

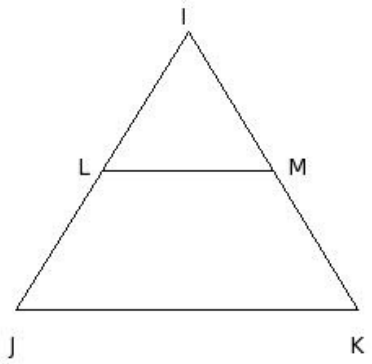
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1. In the given figure $\triangle HIJ$,
K is the mid-point of $\overline{HI}$ and $\overline{KL} \parallel \overline{IJ}$, then HL =



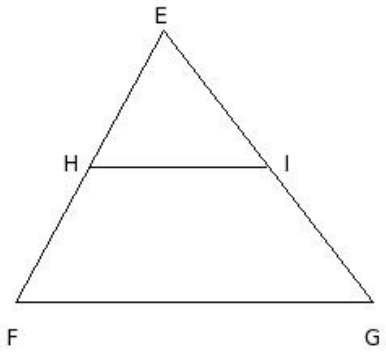
(i) HK (ii) $\frac{IJ}{2}$ (iii) $\frac{JH}{2}$ (iv) IJ (v) $\frac{HI}{2}$

2. In the given figure $\triangle IJK$,
L is the mid-point of $\overline{IJ}$ and $\overline{LM} \parallel \overline{JK}$, then IL =



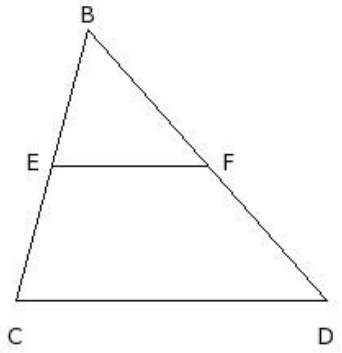
(i) $\frac{IJ}{2}$ (ii) $\frac{KI}{2}$ (iii) $\frac{JK}{2}$ (iv) IM (v) JK

3. In the given figure $\triangle EFG$,
H is the mid-point of $\overline{EF}$ and $\overline{HI} \parallel \overline{FG}$, then EH =



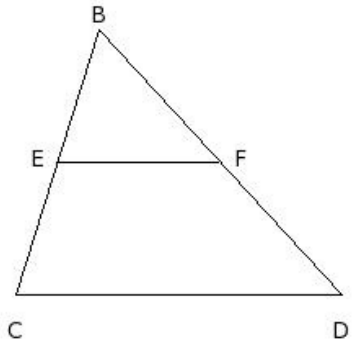
(i) EF (ii) HF (iii) GE (iv) EI (v) IG

4. In the given figure $\triangle BCD$,
E is the mid-point of $\overline{BC}$ and $\overline{EF} \parallel \overline{CD}$, then EC =



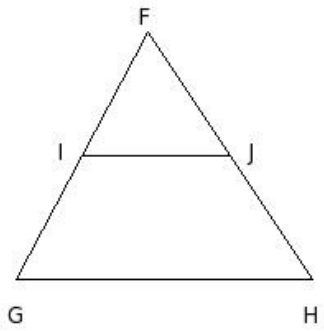
(i) BF (ii) FD (iii) DB (iv) BE (v) BC

5. In the given figure $\triangle BCD$,
E is the mid-point of $\overline{BC}$ and $\overline{EF} \parallel \overline{CD}$, then BF =



(i) BC (ii) EC (iii) DB (iv) FD (v) BE

6. In the given figure $\triangle FGH$,
I is the mid-point of $\overline{FG}$ and $\overline{IJ} \parallel \overline{GH}$, then JH =



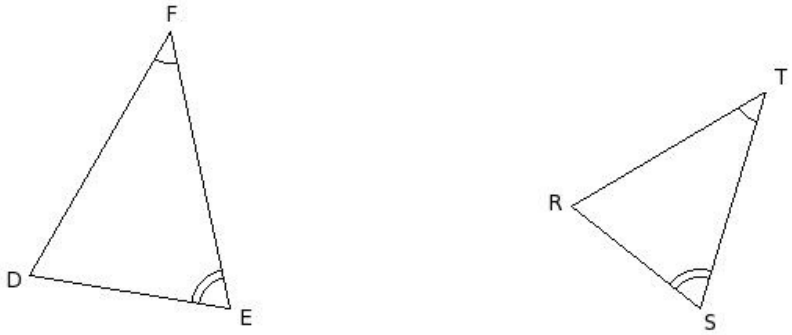
(i) FI (ii) FG (iii) FJ (iv) HF (v) IG

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



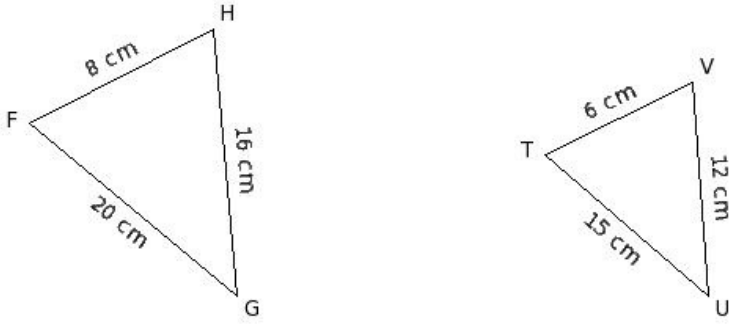
(i) not similar (ii) SAS Similarity (iii) AAA Similarity (iv) SSS Similarity

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



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

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

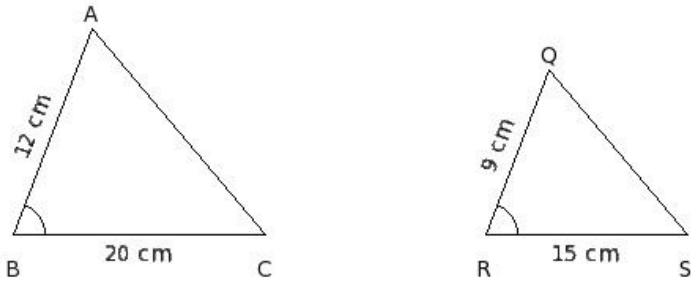


(i) not similar (ii) SAS Similarity (iii) AAA Similarity (iv) SSS Similarity

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

10. $\angle B = \angle R$ and $\frac{AB}{QR} = \frac{BC}{RS}$.

Identify the property by which the two triangles are similar

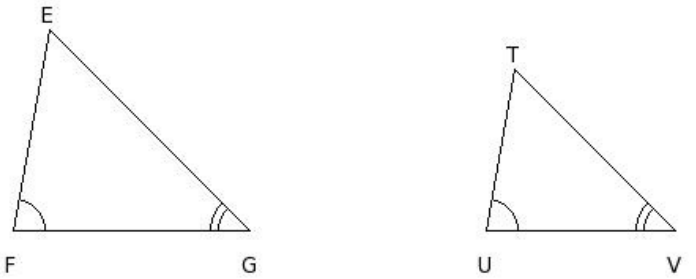


(i) SAS Similarity (ii) AAA Similarity (iii) SSS Similarity (iv) not similar

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

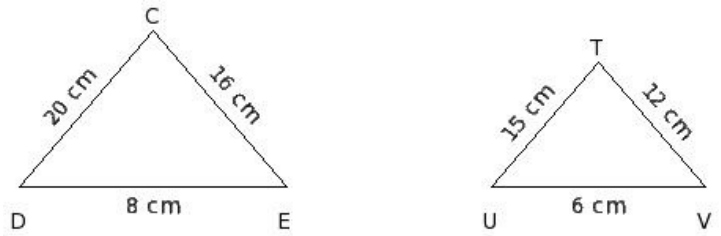
11. $\angle F = \angle U$ and $\angle G = \angle V$.

Identify the property by which the two triangles are similar



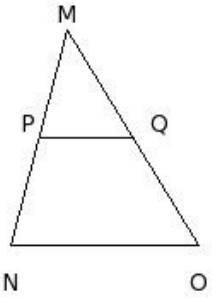
(i) not similar (ii) SSS Similarity (iii) AAA Similarity (iv) SAS Similarity

12. In the given figure, $\triangle CDE$ and $\triangle TUV$ are such that
$\frac{CD}{TU} = \frac{DE}{UV} = \frac{EC}{VT}$.
Identify the property by which the two triangles are similar



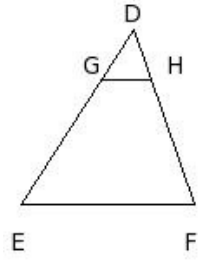
(i) SAS Similarity (ii) AAA Similarity (iii) not similar (iv) SSS Similarity

13. In the given figure, $PQ \parallel NO$. If $\frac{MP}{PN} = \frac{1}{1}$ and $MO = 15.4$ cm, find MQ



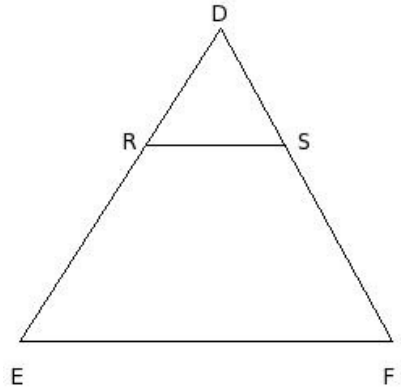
(i) 7.70 cm (ii) 9.70 cm (iii) 5.70 cm (iv) 8.70 cm (v) 6.70 cm

14. In the given figure, $GH \parallel EF$.
If $DG = 3.57$ cm, $DE = 12.5$ cm and $DF = 11.1$ cm, find DH



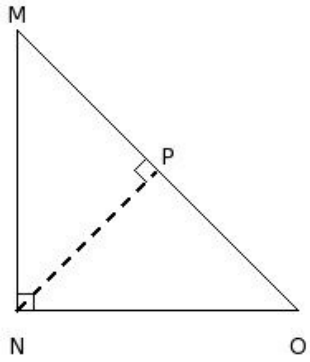
(i) 5.17 cm (ii) 1.17 cm (iii) 2.17 cm (iv) 4.17 cm (v) 3.17 cm

15. In the given figure, RS ∥ EF and DE = 23 cm, RS = 13.8 cm and EF = 23 cm, find DR



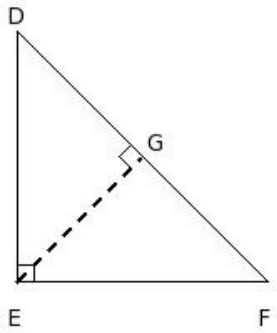
(i) 13.8 cm (ii) 15.8 cm (iii) 11.8 cm (iv) 12.8 cm (v) 14.8 cm

16. In the given figure, △MNO is isosceles right-angled at N and NP ⊥ OM. ∠P =



(i) ∠M (ii) ∠Q (iii) ∠N (iv) ∠O (v) ∠R

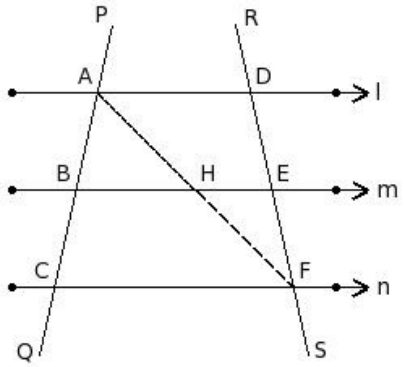
17. In the given figure, △DEF is isosceles right-angled at E and EG ⊥ FD. ∠DEF =



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

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

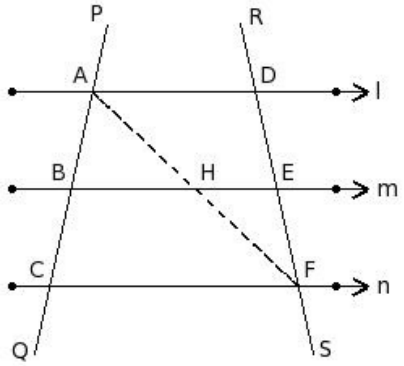
18. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively. △ACF ~



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

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

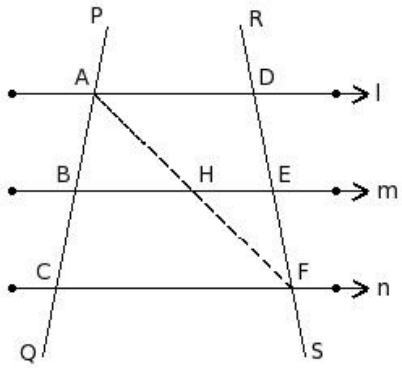
19. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively. ∠HFE =



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

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

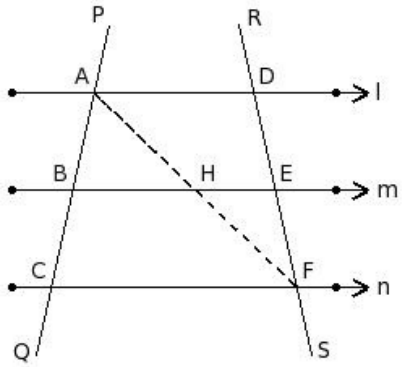
20. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.
∠ACF =



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

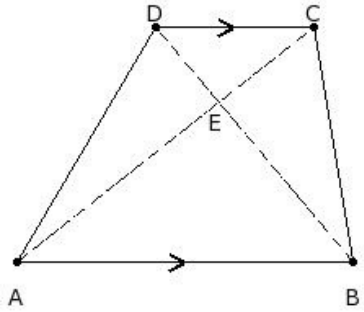
In the given figure, three lines l , m and n are such that l ∥ m ∥ n.

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



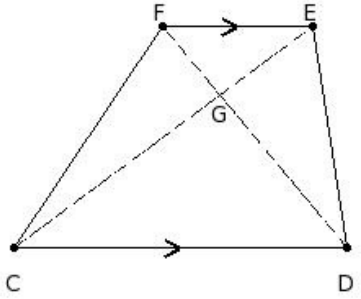
(i) ∠CFA (ii) ∠BHA (iii) ∠AFD (iv) ∠DAF (v) ∠HFE

22. In the given figure, ABCD is a trapezium in which
AB ∥ CD and the diagonals BD and AC intersect at E .
If $EA = (2x+14)$ cm, $BE = (2x+2)$ cm, $EC = (x+23)$ cm and
$DE = (x+14)$ cm, find the value of x



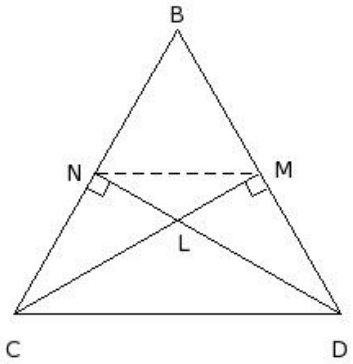
(i) (25,24) (ii) (26,26) (iii) (25,25) (iv) (27,27) (v) (27,25)

23. In the given figure, CDEF is a trapezium in which CD ∥ EF and the diagonals DF and CE intersect at G. △GEF ~



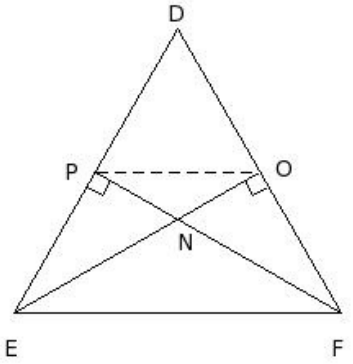
(i) △DEF (ii) △FCD (iii) △GCD (iv) △GFC (v) △GDE

24. In the given figure, the altitudes MC and DN of △BCD meet at L. △LCD ~



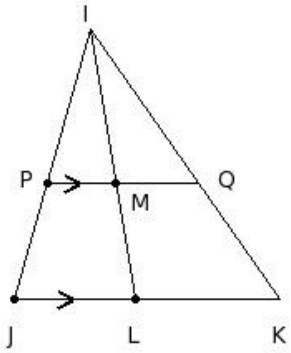
(i) △NCD (ii) △MDC (iii) △NCL (iv) △MDL (v) △LNM

25. In the given figure, the altitudes OE and FP of △DEF meet at N. ∠NFO =



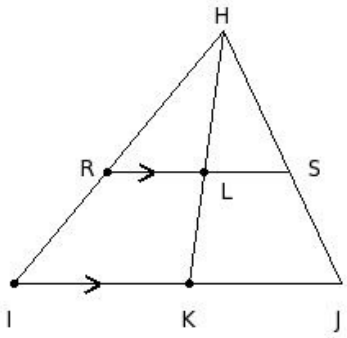
(i) ∠ENP (ii) ∠ONF (iii) ∠NPE (iv) ∠PEN (v) ∠FON

26. In the given figure, PQ ∥ JK , and median IL bisects PQ.
If IJ = 17 cm, IL = 16.9 cm and IM = 9.66 cm, IP =



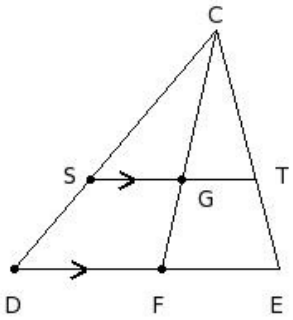
(i) 10.71 cm (ii) 8.71 cm (iii) 7.71 cm (iv) 11.71 cm (v) 9.71 cm

27. In the given figure, RS ∥ IJ , and median HK bisects RS.
If HK = 15.5 cm, HJ = 17 cm and HS = 9.44 cm, HL =



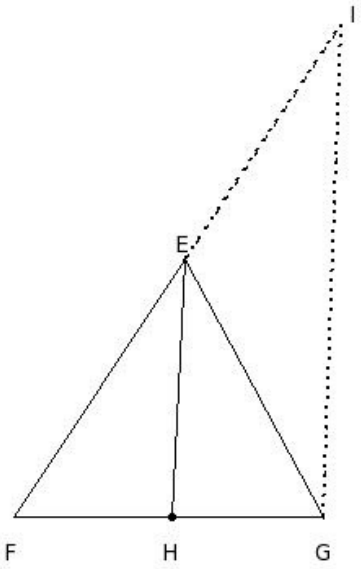
(i) 8.61 cm (ii) 10.61 cm (iii) 7.61 cm (iv) 6.61 cm (v) 9.61 cm

28. In the given figure, ST ∥ DE , and median CF bisects ST. △CSG ~



(i) △CGT (ii) △CFE (iii) △CDF (iv) △DEC (v) △CDE

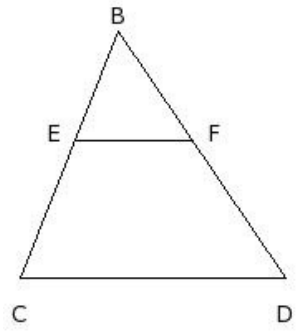
29. In the given figure, △EFG is a triangle in which EH is the internal bisector of ∠E and GI ∥ HE meeting FE produced at I . ∠GIE =



(i) ∠HEF (ii) ∠IEG (iii) ∠FHE (iv) ∠EHG (v) ∠HGE

30. 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) BC = 16 cm, EC = 8.89 cm, BF = 10 cm and BD = 18 cm
b) BC = 16 cm, BE = 9.11 cm, BD = 18 cm and FD = 10 cm
c) BC = 16 cm, EC = 8.89 cm, BD = 18 cm and BF = 8 cm
d) BE = 7.11 cm, EC = 8.89 cm, BF = 8 cm and FD = 10 cm



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

31. Which of the following are true?

a) Any two triangles are similar.
b) Any two circles are congruent.
c) Any two squares are similar.
d) Any two triangles are congruent.
e) Any two squares are congruent.
f) Any two circles are similar.

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

32. Which of the following are true?

a) A semi-circle is a polygonal region.
b) A square is a polygonal region.
c) A circle is a polygonal region.
d) A sector is a polygonal region.
e) A triangle is a polygonal region.

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

33. Which of the following are true?

a) Similar and congruent are not synonymous.
b) If two figures are congruent, then they are similar too.
c) Similar figures have same area.
d) Congruent figures have same area.
e) If two figures are similar, then they are congruent too.

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

34. Which of the following are true?

a) Area of a convex polygonal region is equal to the sum of the areas of all triangles formed by joining the vertices of the polygon with an interior point.
b) Area of the union of two polygonal region is not equal to the sum of the individual area.
c) A polygonal region can be divided into a finite number of triangles in a unique way.
d) Area of the union of two polygonal region is the sum of the individual area.

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

35. Which of the following are necessary conditions for similarity of two polygons ?

a) The corresponding sides are equal.
b) The corresponding angles are equal.
c) The corresponding angles are proportional.
d) The corresponding sides are proportional.

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

36. Which of the following are true?

a) Similarity is anti symmetric.
b) Similarity is reflexive.
c) Similarity is symmetric.
d) Similarity is transitive.

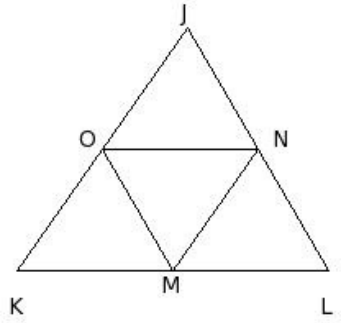
(i) {a,c} (ii) {a,d} (iii) {a,b} (iv) {a,b,c} (v) {b,c,d}

37. Which of the following are true?

a) Any two triangles are similar if the corresponding angles are equal.
b) Any two triangles are similar if the corresponding sides are proportional.
c) Any two quadrilaterals are similar if the corresponding angles are equal.
d) Any two quadrilaterals are similar if the corresponding sides are proportional.

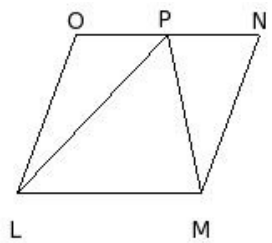
(i) {c,a} (ii) {a,b,d} (iii) {c,a,b} (iv) {c,d} (v) {c,b}

38. In the given figure, the area of the △JKL is x sq.cm. M,N,O are the mid-points of the sides KL , LJ and JK respectively. The area of the △MNO is



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

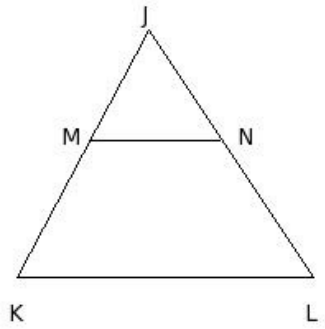
39. In the given figure, the parallelogram LMNO and the triangle △PLM are on the same bases and between the same parallels.
The area of the △PLM is x sq.cm. The area of the parallelogram is



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

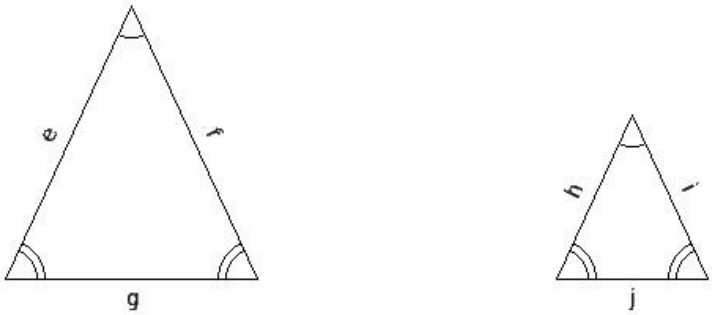
(iv) $\frac{3}{2}$ the area of the triangle (v) thrice the area of the triangle

40. In the given △JKL, MN ∥ KL. If JM : MK = 7.56 cm : 9.44 cm and JL = 18 cm, JN =



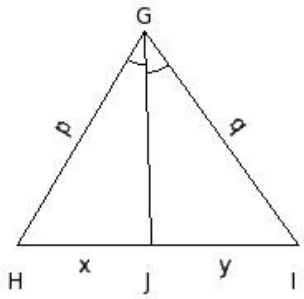
(i) 10.00 cm (ii) 8.00 cm (iii) 6.00 cm (iv) 9.00 cm (v) 7.00 cm

41. In the given two similar triangles, if e = 19 cm, f = 19 cm, g = 16 cm, h = 11.4 cm, find i



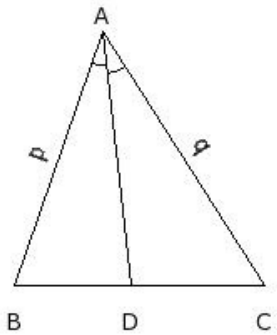
(i) 13.40 cm (ii) 9.40 cm (iii) 12.40 cm (iv) 11.40 cm (v) 10.40 cm

42. In the given figure, given ∠JGH = ∠IGJ, x : y = 8.23 cm : 8.77 cm and p = 15 cm, find q =



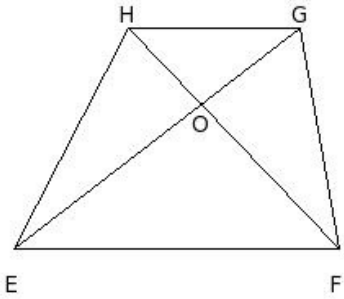
(i) 16.00 cm (ii) 18.00 cm (iii) 15.00 cm (iv) 17.00 cm (v) 14.00 cm

43. In the given figure, given ∠DAB = ∠CAD, p = 7.06 cm, q = 7.94 cm and BC = 15 cm, find BD =



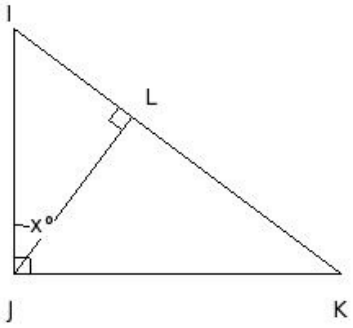
(i) 5.06 cm (ii) 8.06 cm (iii) 7.06 cm (iv) 9.06 cm (v) 6.06 cm

44. In the given figure, EFGH is a trapezium where OE = 14 cm , OF = 14 cm and OH = 5 cm . Find OG =



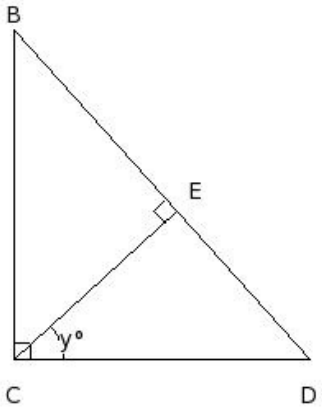
(i) 6 cm (ii) 3 cm (iii) 7 cm (iv) 5 cm (v) 4 cm

45. In the given figure, ∠LIJ = 53.13°, find the value of x =



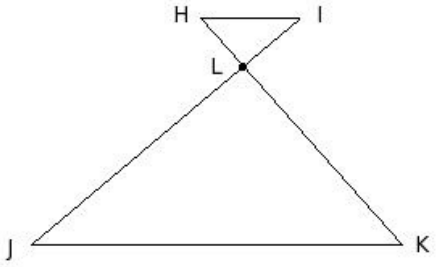
(i) 38.87° (ii) 36.87° (iii) 37.87° (iv) 35.87° (v) 34.87°

46. In the given figure, ∠CDE = 48.01°, find the value of y =



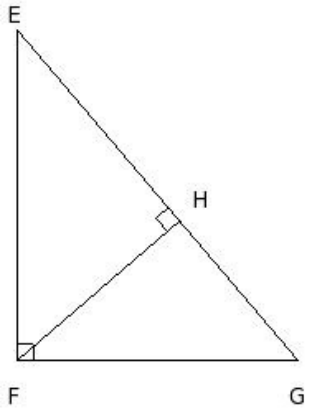
(i) 42.99° (ii) 43.99° (iii) 41.99° (iv) 40.99° (v) 39.99°

47. In the given figure, if HI ∥ JK then



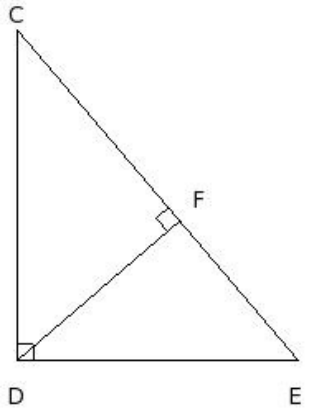
(i) △LIH ~ △LKJ (ii) △HIL ~ △LKJ (iii) △HIL ~ △LJK (iv) △LHI ~ △LJK (v) △HIL ~ △KJL

48. In the given figure, △EFG is right-angled at F. Also, FH ⊥ EG. If EF = 20 cm, FH = 12.95 cm, then find FG.



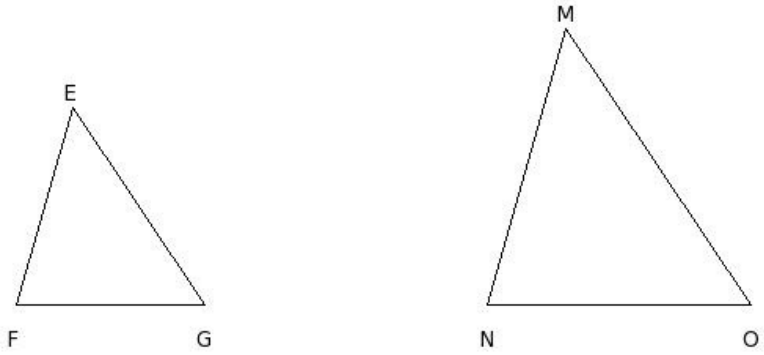
(i) 16.00 cm (ii) 19.00 cm (iii) 18.00 cm (iv) 15.00 cm (v) 17.00 cm

49. In the given figure, △CDE is right-angled at D. Also, DF ⊥ CE. If CF = 15.2 cm, FE = 11.1 cm, then find DF.



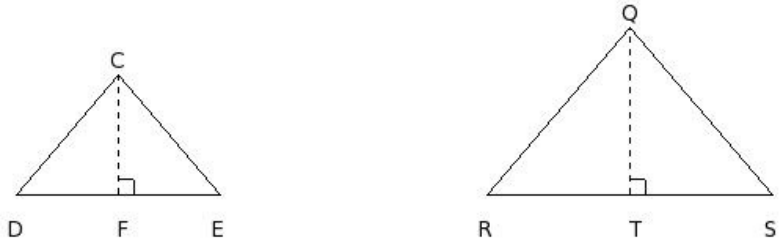
(i) 12.99 cm (ii) 14.99 cm (iii) 13.99 cm (iv) 10.99 cm (v) 11.99 cm

50. In the given figure, △EFG ~ △MNO and EF = 13 cm, MN = 18.2 cm.
If the area of the △MNO = 146.67 sq.cm, find the area of the △EFG



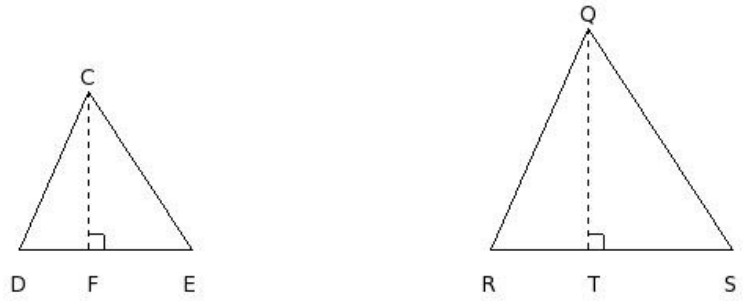
(i) 74.83 sq.cm (ii) 72.83 sq.cm (iii) 73.83 sq.cm (iv) 75.83 sq.cm (v) 76.83 sq.cm

51. In the given figure, △CDE ~ △QRS and DE = 13 cm , RS = 18.2 cm and
CF = 7.6 cm, find the area of the △QRS



(i) 95.82 sq.cm (ii) 97.82 sq.cm (iii) 96.82 sq.cm (iv) 94.82 sq.cm (v) 98.82 sq.cm

52. In the given figure, △CDE & △QRS are similar triangles. If the ratio of the heights CF : QT = 10 : 14, then the ratio of their areas is



(i) 100 sq.cm : 198 sq.cm (ii) 101 sq.cm : 196 sq.cm (iii) 100 sq.cm : 194 sq.cm (iv) 100 sq.cm : 196 sq.cm

(v) 99 sq.cm : 196 sq.cm

53. In the given figure, points M , N and O are the mid-points of sides KL, LJ and JK of △JKL. Which of the following are true?

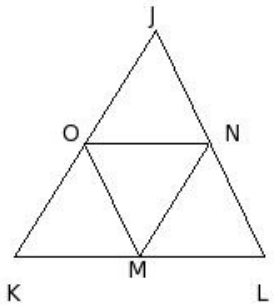
a) Area of $\triangle JKL = \frac{1}{3}$ area of △MNO

b) Area of trapezium KLNO is thrice the area of △JON

c) Area of △JKL = 4 times area of △MNO

d) Area of trapezium KLNO is $\frac{1}{4}$ the area of △JKL

e) All four small triangles have equal areas



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

54. 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?

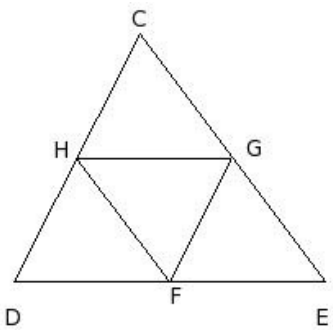
a) △FGH ~ △CDE

b) △HDF ~ △CDE

c) △CHG ~ △CDE

d) △GFE ~ △CDE

e) △FHG ~ △CDE

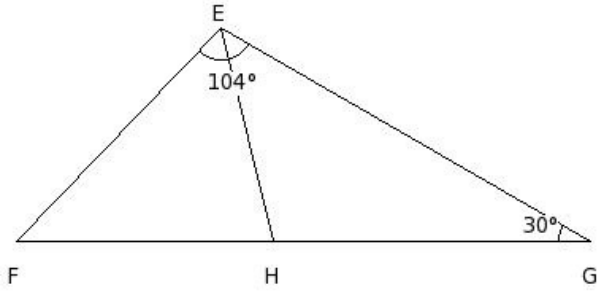


(i) {e,b} (ii) {e,a} (iii) {e,d,a} (iv) {a,b,c,d} (v) {e,c}

55. The perimeters of two similar triangles are 25 cm and 15 cm respectively. If one side of the first triangle is 10 cm, find the length of the corresponding side of the second triangle.

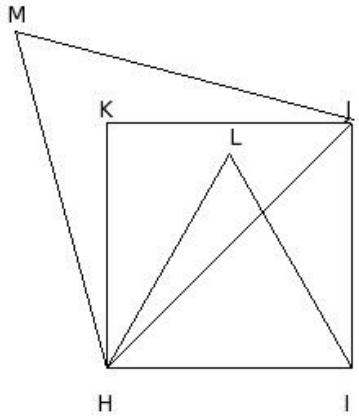
(i) 7.00 cm (ii) 5.00 cm (iii) 6.00 cm (iv) 8.00 cm (v) 4.00 cm

56. In the given figure, H is a point on side FG of △EFG such that ∠GEF = ∠EHG = 104° , ∠HGE = 30°. Find ∠GEH



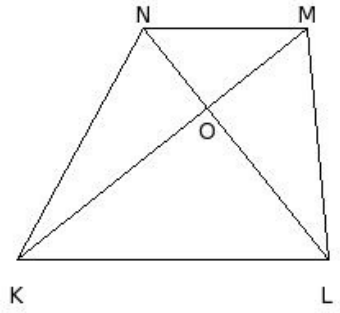
(i) 46° (ii) 47° (iii) 48° (iv) 44° (v) 45°

57. HIJK is a square and △HIL is an equilateral triangle. Also, △HJM is an equilateral triangle. If area of △HIL is 'a' sq.units, then the area of △HJM is



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

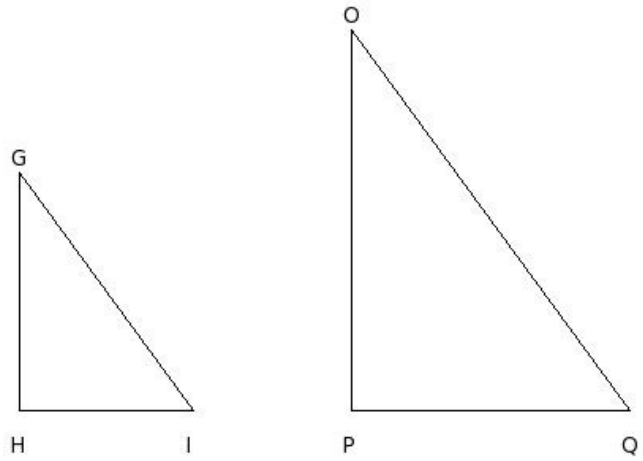
58. KLMN is a cyclic trapezium. Diagonals LN and KM intersect at O. If NK = 16 cm, find LM



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

A vertical stick 15 m long casts a shadow of 11 m long on the ground.

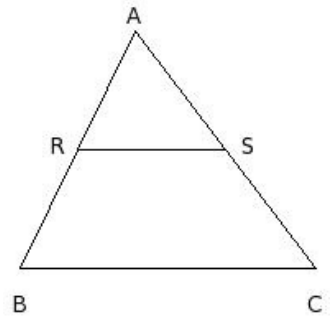
59. At the same time, a tower casts the shadow 88 m long on the ground. Find the height of the tower.



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

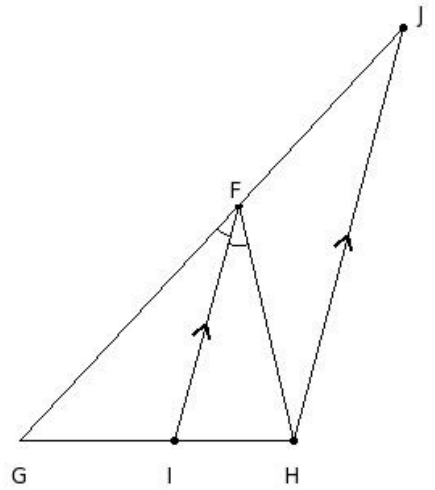
In the given figure, △ABC, RS ∥ BC such that

60. area of $\triangle ARS$ = area of RSCB. Find $\frac{AR}{AB}$



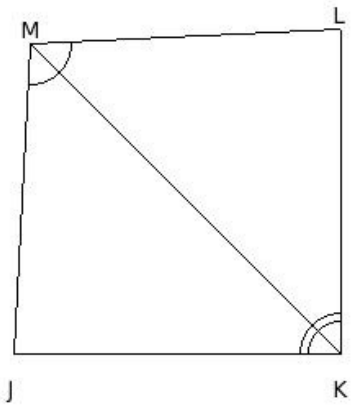
(i) $\frac{1}{2}\sqrt{2}$ (ii) 1 (iii) $\frac{1}{2}\sqrt{5}$ (iv) $\frac{1}{2}\sqrt{2}$ (v) $\frac{1}{2}\sqrt{\frac{1}{2}}$

61. In the given figure, ∠IFG = ∠HFI and FI ∥ JH and FG = 20 cm, GI = 10 cm and IH = 7 cm. Find FJ



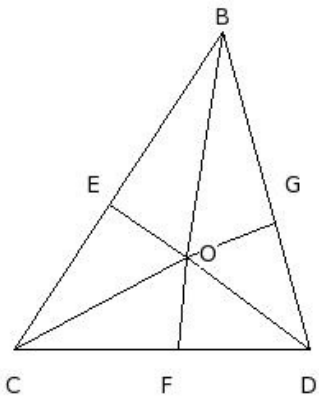
(i) 12.00 cm (ii) 16.00 cm (iii) 15.00 cm (iv) 13.00 cm (v) 14.00 cm

62. In the given figure, KM is the angular bisector of $\angle K$ & $\angle M$
$JK = 20\ cm, KL = 20\ cm$ and $LM = 19\ cm$. Find MJ



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

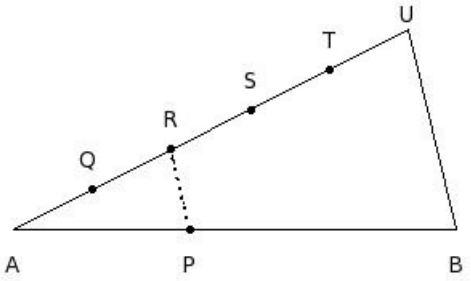
63. In the given figure, BCD is a triangle and 'O' is a point inside $\triangle BCD$. The angular bisector of $\angle COB$, $\angle DOC$ & $\angle BOD$ meet BC, CD & DB at E, F & G respectively . Then



(i) BE . CF . DG = BC . CD . DB (ii) BE . CF . DG = OB . OC . OD (iii) BE . CF . DG = EF . FG . GE

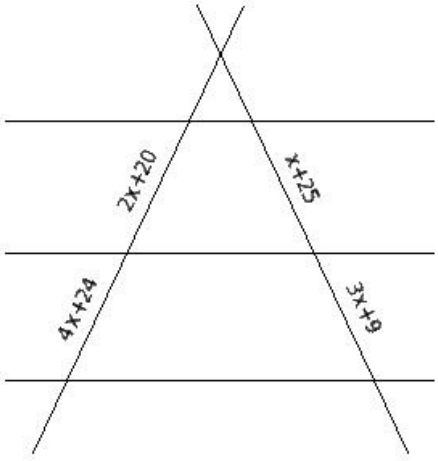
(iv) BE . CF . DG = EC . FD . GB (v) BE . CF . DG = OE . OF . OG

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



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

65. From the given figure and values, find x

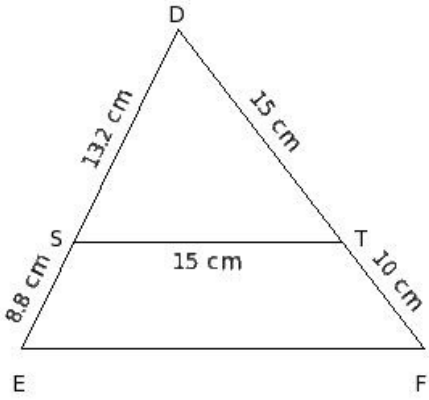


(i) (30,-7) (ii) (31,-6) (iii) (30,-8) (iv) (-5,32) (v) (33,-7)

66. The ratio of the bases of two triangles ABC and DEF is 4:10 .
If the triangles are equal in area, then the ratio of their heights is

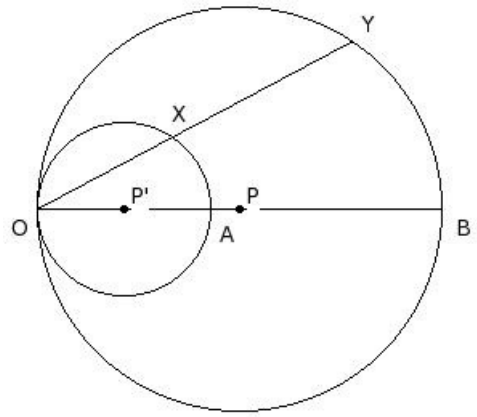
(i) 4:7 (ii) 5:10 (iii) 3:10 (iv) 10:4 (v) 4:12

67. If the measures are as shown in the given figure, find EF



(i) 24.0 cm (ii) 23.0 cm (iii) 26.0 cm (iv) 25.0 cm (v) 27.0 cm

68. 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 = 22 cm and radius of the inner circle is 5.4 cm .
Find the radius of the outer circle.



(i) 9.88 cm (ii) 13.88 cm (iii) 11.88 cm (iv) 10.88 cm (v) 12.88 cm

Assignment Key

1) (iii)	2) (i)	3) (ii)	4) (iv)	5) (iv)	6) (iii)
7) (ii)	8) (ii)	9) (iv)	10) (i)	11) (iii)	12) (iv)
13) (i)	14) (v)	15) (i)	16) (iii)	17) (iii)	18) (v)
19) (iv)	20) (iv)	21) (iv)	22) (iii)	23) (iii)	24) (v)
25) (iv)	26) (v)	27) (i)	28) (iii)	29) (i)	30) (i)
31) (v)	32) (i)	33) (i)	34) (iv)	35) (i)	36) (v)
37) (ii)	38) (v)	39) (ii)	40) (ii)	41) (iv)	42) (i)
43) (iii)	44) (iv)	45) (ii)	46) (iii)	47) (v)	48) (v)
49) (i)	50) (i)	51) (iii)	52) (iv)	53) (ii)	54) (iv)
55) (iii)	56) (i)	57) (v)	58) (v)	59) (iv)	60) (iv)
61) (v)	62) (i)	63) (iv)	64) (iv)	65) (i)	66) (iv)
67) (iv)	68) (iii)				

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