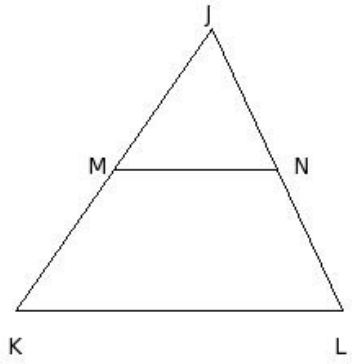
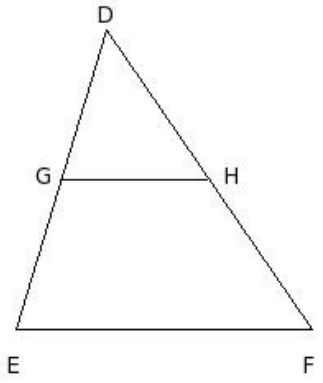
1. In the given figure $\triangle JKL$,
M is the mid-point of $\overline{JK}$ and $\overline{MN} \parallel \overline{KL}$, then JN =



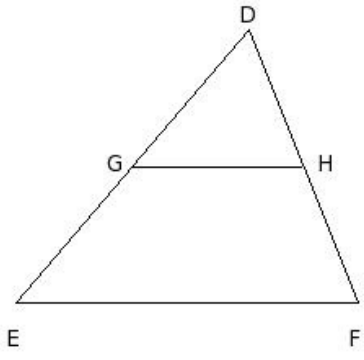
(i) $\frac{KL}{2}$ (ii) JM (iii) $\frac{JK}{2}$ (iv) KL (v) $\frac{LJ}{2}$

2. In the given figure $\triangle DEF$,
G is the mid-point of $\overline{DE}$ and $\overline{GH} \parallel \overline{EF}$, then DG =



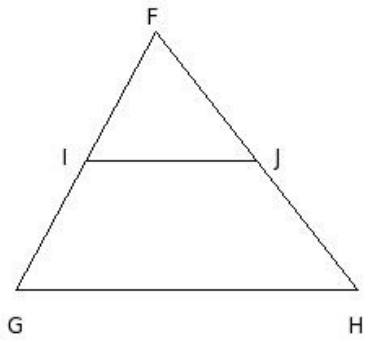
(i) $\frac{FD}{2}$ (ii) EF (iii) $\frac{EF}{2}$ (iv) DH (v) $\frac{DE}{2}$

3. In the given figure $\triangle DEF$,
G is the mid-point of $\overline{DE}$ and $\overline{GH} \parallel \overline{EF}$, then DG =



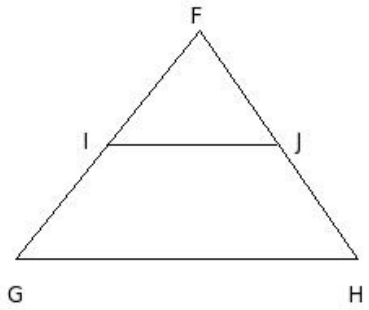
(i) DH (ii) DE (iii) GE (iv) HF (v) FD

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



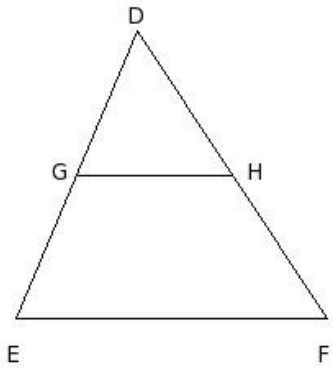
(i) FI (ii) HF (iii) JH (iv) FJ (v) FG

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



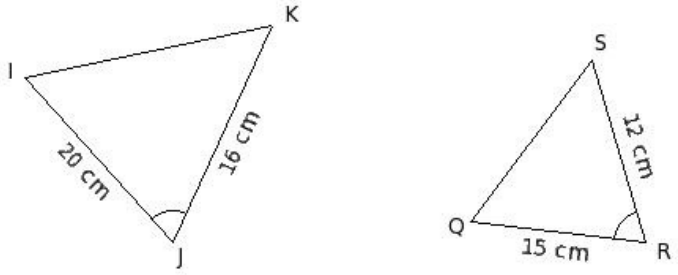
(i) JH (ii) FI (iii) FG (iv) IG (v) HF

6. In the given figure $\triangle DEF$,
G is the mid-point of $\overline{DE}$ and $\overline{GH} \parallel \overline{EF}$, then HF =



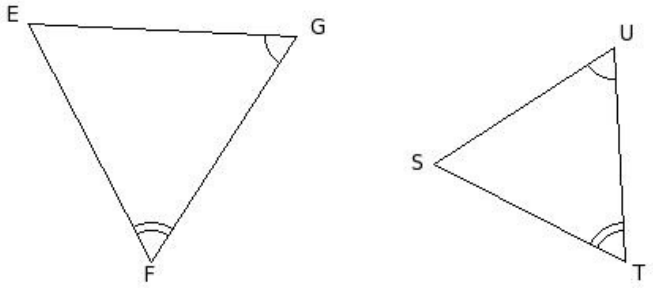
(i) FD (ii) GE (iii) DE (iv) DH (v) DG

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



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

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



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

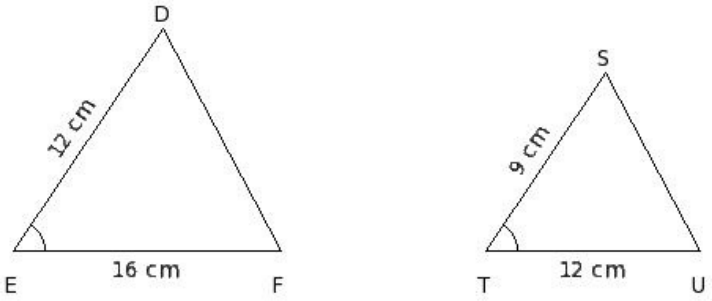
9. Identify the property by which the two given triangles are similar

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

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

10. $\angle E = \angle T$ and $\frac{DE}{ST} = \frac{EF}{TU}$.

Identify the property by which the two triangles are similar

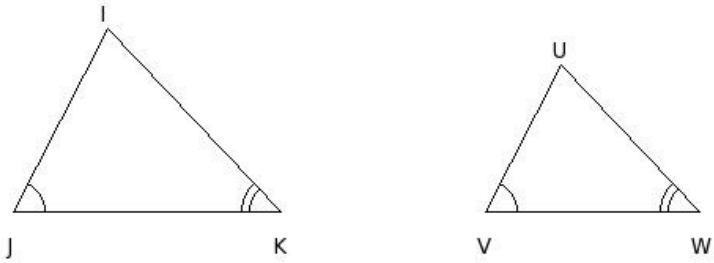


(i) SSS Similarity (ii) AAA Similarity (iii) not similar (iv) SAS Similarity

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

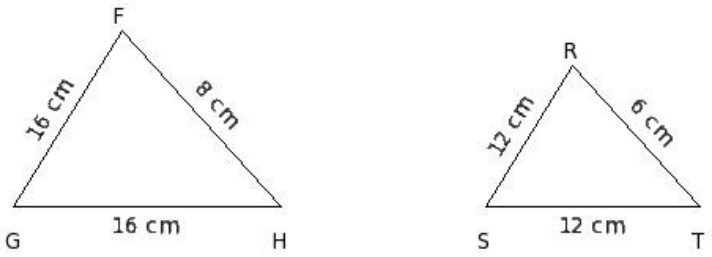
11. $\angle J = \angle V$ and $\angle K = \angle W$.

Identify the property by which the two triangles are similar



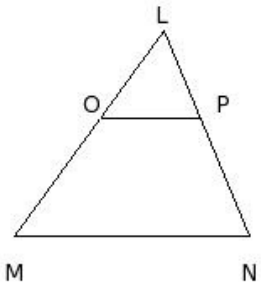
(i) not similar (ii) SSS Similarity (iii) AAA Similarity (iv) SAS Similarity

12. In the given figure, $\triangle FGH$ and $\triangle RST$ are such that
$\frac{FG}{RS} = \frac{GH}{ST} = \frac{HF}{TR}$.
Identify the property by which the two triangles are similar



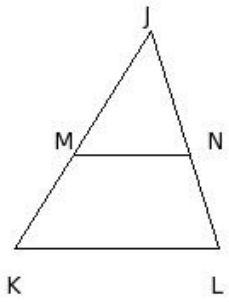
(i) SAS Similarity (ii) not similar (iii) SSS Similarity (iv) AAA Similarity

13. In the given figure, $OP \parallel MN$. If $\frac{LO}{OM} = \frac{3}{4}$ and $LN = 13.6$ cm, find LP



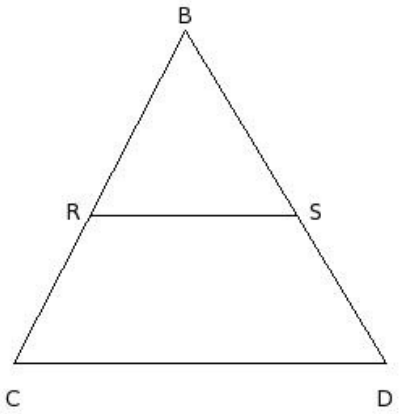
(i) 7.83 cm (ii) 6.83 cm (iii) 5.83 cm (iv) 3.83 cm (v) 4.83 cm

14. In the given figure, $MN \parallel KL$.
If $JM = 8.69$ cm, $JK = 15.2$ cm and $JL = 13.7$ cm, find JN



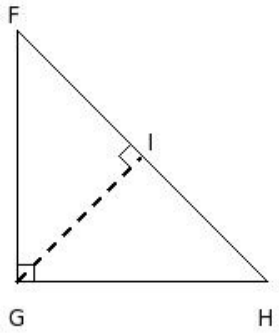
(i) 9.83 cm (ii) 7.83 cm (iii) 5.83 cm (iv) 8.83 cm (v) 6.83 cm

15. In the given figure, RS ∥ CD and BR = 13.8 cm, BC = 23 cm and RS = 13.8 cm, find CD



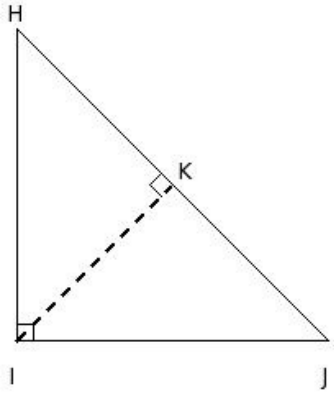
(i) 21.0 cm (ii) 25.0 cm (iii) 22.0 cm (iv) 23.0 cm (v) 24.0 cm

16. In the given figure, △FGH is isosceles right-angled at G and GI ⊥ HF. ∠F =



(i) ∠G (ii) ∠H (iii) ∠J (iv) ∠K (v) ∠I

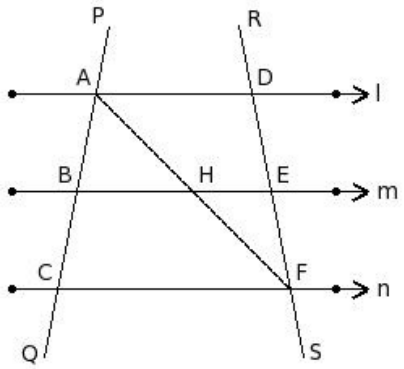
17. In the given figure, △HIJ is isosceles right-angled at I and IK ⊥ JH. ∠IJH ≠



(i) ∠KIJ (ii) ∠HIJ (iii) ∠KHI (iv) ∠HIK (v) ∠IJK

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

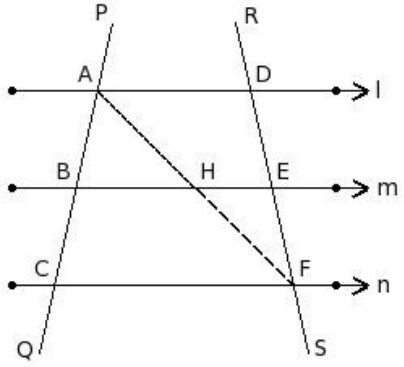
18. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively. △ABH ~



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

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

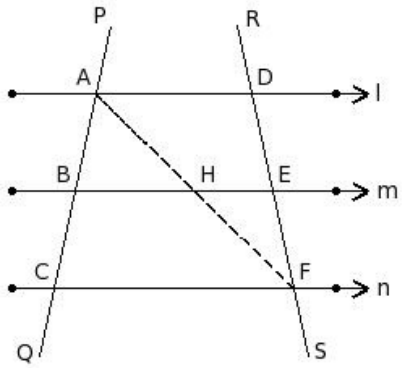
19. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively. ∠HFE =



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

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

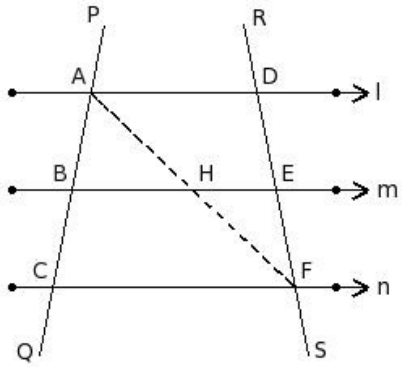
20. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.
∠FDA =



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

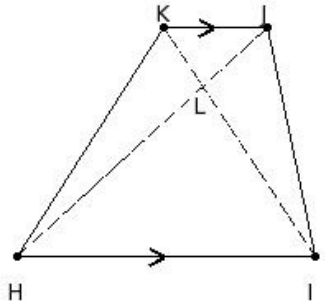
In the given figure, three lines l , m and n are such that l ∥ m ∥ n.

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



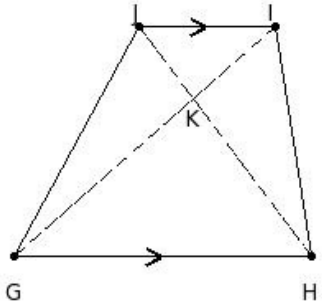
(i) ∠BHA (ii) ∠HFE (iii) ∠CFA (iv) ∠AFD (v) ∠DAF

22. In the given figure, HIJK is a trapezium in which
HI ∥ JK and the diagonals IK and HJ intersect at L.
If $LH = (x+80)$ cm, $IL = (2x+16)$ cm, $LJ = (x+8)$ cm and
$KL = (x+18)$ cm, find the value of x



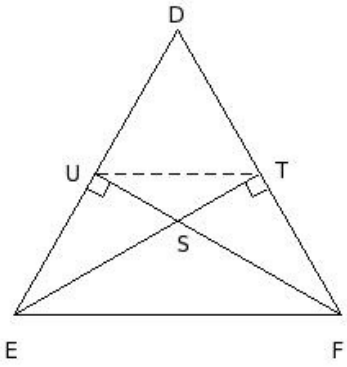
(i) (84,-16) (ii) (82,-17) (iii) (-14,84) (iv) (82,-16) (v) (83,-15)

23. In the given figure, GHIJ is a trapezium in which GH ∥ IJ and the diagonals HJ and GI intersect at K. △KIJ ~



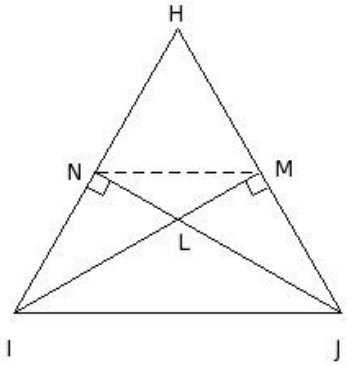
(i) △JGH (ii) △KHI (iii) △KGH (iv) △KJG (v) △HIJ

24. In the given figure, the altitudes TE and FU of △DEF meet at S. △SUT ~



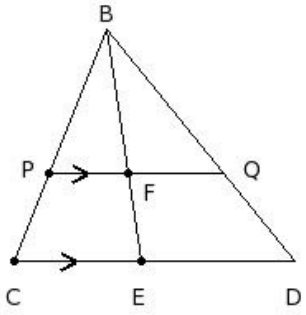
(i) △SEF (ii) △TFS (iii) △UEF (iv) △UES (v) △TFE

25. In the given figure, the altitudes MI and JN of △HIJ meet at L. ∠JML =



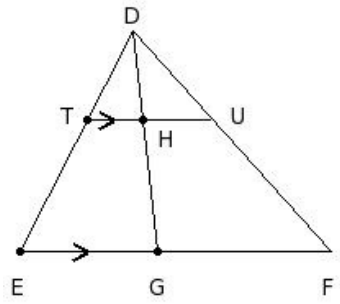
(i) ∠NIL (ii) ∠LJM (iii) ∠MLJ (iv) ∠LNI (v) ∠ILN

26. In the given figure, PQ ∥ CD , and median BE bisects PQ. If BC = 15 cm, BE = 15.1 cm and BP = 9.38 cm, BF =



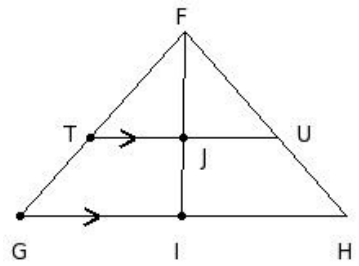
(i) 9.44 cm (ii) 8.44 cm (iii) 10.44 cm (iv) 11.44 cm (v) 7.44 cm

27. In the given figure, TU ∥ EF , and median DG bisects TU.
If DG = 13.5 cm, DH = 5.4 cm and DU = 7.2 cm, DF =



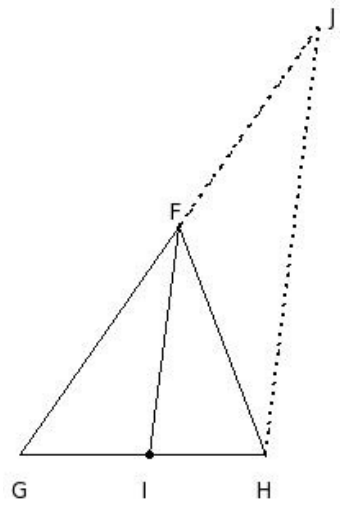
(i) 17.00 cm (ii) 19.00 cm (iii) 16.00 cm (iv) 20.00 cm (v) 18.00 cm

28. In the given figure, TU ∥ GH , and median FI bisects TU. △FIH ~



(i) △FJU (ii) △FTJ (iii) △FGI (iv) △FGH (v) △GHF

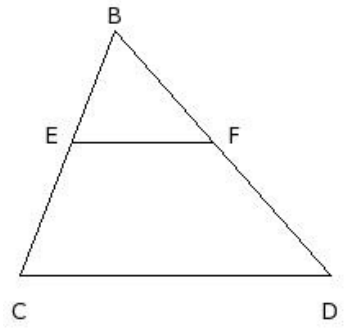
29. In the given figure, △FGH is a triangle in which FI is the internal bisector of ∠F and HJ ∥ IF meeting GF produced at J . ∠IFG =



(i) ∠IHF (ii) ∠GIF (iii) ∠FHJ (iv) ∠JFH (v) ∠FIH

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, BE = 9.27 cm, BD = 20 cm and FD = 10.91 cm
b) BC = 16 cm, EC = 8.73 cm, BD = 20 cm and BF = 9.09 cm
c) BE = 7.27 cm, EC = 8.73 cm, BF = 9.09 cm and FD = 10.91 cm
d) BC = 16 cm, EC = 8.73 cm, BF = 11.09 cm and BD = 20 cm



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

31. Which of the following are true?

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

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

32. Which of the following are true?

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

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

33. Which of the following are true?

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

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

34. Which of the following are true?

a) Area of the union of two polygonal region is the sum of the individual area.
b) Area of the union of two polygonal region is not equal to the sum of the individual area.
c) 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.
d) A polygonal region can be divided into a finite number of triangles in a unique way.

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

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

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

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

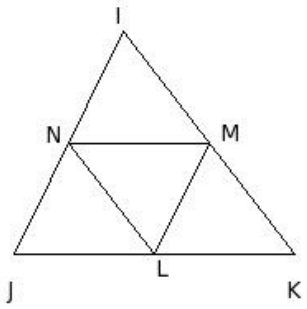
(i) {a,b,c} (ii) {a,b} (iii) {a,c} (iv) {a,d} (v) {b,c,d}

37. Which of the following are true?

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

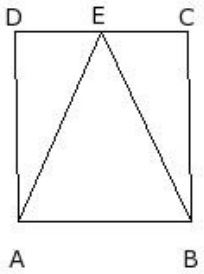
(i) {c,d} (ii) {c,a} (iii) {c,b} (iv) {a,b,d} (v) {c,a,b}

38. In the given figure, the area of the △IJK is x sq.cm. L,M,N are the mid-points of the sides JK , KI and IJ respectively. The area of the △LMN is



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

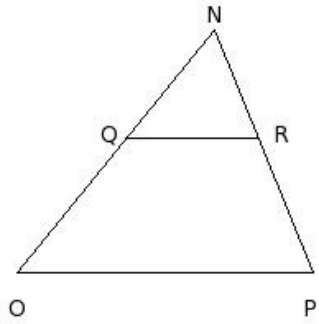
39. In the given figure, the parallelogram ABCD and the triangle △EAB are on the same bases and between the same parallels.
The area of the △EAB is x sq.cm. The area of the parallelogram is



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

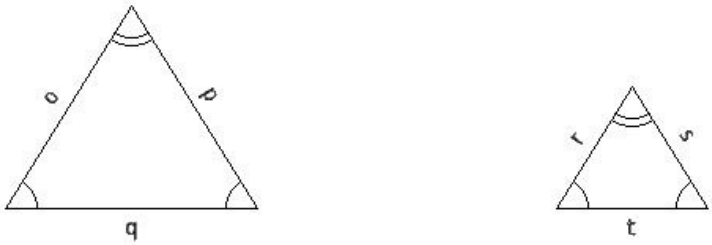
(iv) twice the area of the triangle (v) $\frac{3}{2}$ the area of the triangle

40. In the given △NOP, QR ‖ OP. If NQ : QO = 8.44 cm : 10.56 cm and NP = 16 cm, RP =



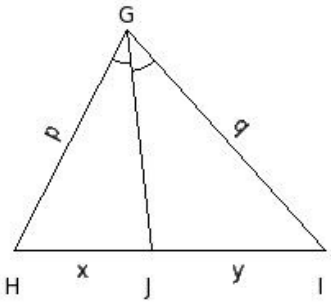
(i) 10.89 cm (ii) 8.89 cm (iii) 6.89 cm (iv) 9.89 cm (v) 7.89 cm

41. In the given two similar triangles, if o = 15 cm, p = 15 cm, q = 16 cm, s = 9 cm, find t



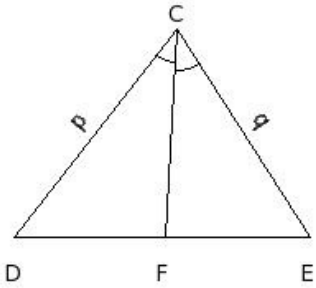
(i) 8.60 cm (ii) 9.60 cm (iii) 7.60 cm (iv) 10.60 cm (v) 11.60 cm

42. In the given figure, given ∠JGH = ∠IGJ, x : y = 8.64 cm : 10.36 cm and p = 15 cm, find q =



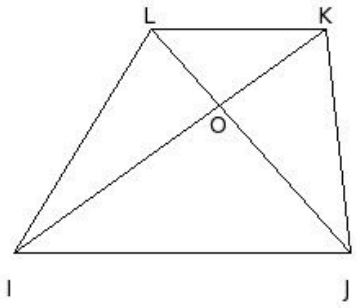
(i) 18.00 cm (ii) 16.00 cm (iii) 17.00 cm (iv) 19.00 cm (v) 20.00 cm

43. In the given figure, given ∠FCD = ∠ECF, p = 9.29 cm, q = 8.71 cm and DE = 18 cm, find DF =



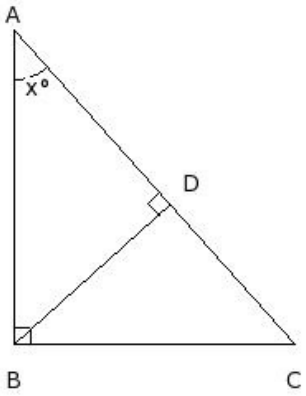
(i) 8.29 cm (ii) 7.29 cm (iii) 10.29 cm (iv) 9.29 cm (v) 11.29 cm

44. In the given figure, IJKL is a trapezium where OI = 14 cm , OK = 5 cm and OL = 5 cm . Find OJ =



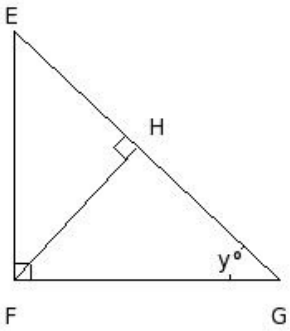
(i) 14 cm (ii) 13 cm (iii) 15 cm (iv) 16 cm (v) 12 cm

45. In the given figure, ∠ABD = 48.18°, find the value of x =



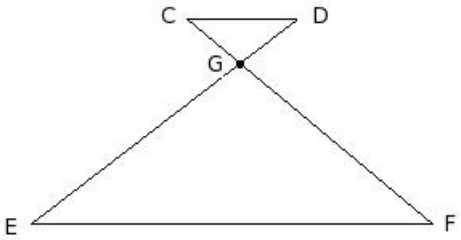
(i) 43.82° (ii) 39.82° (iii) 42.82° (iv) 41.82° (v) 40.82°

46. In the given figure, ∠HFG = 47.23°, find the value of y =



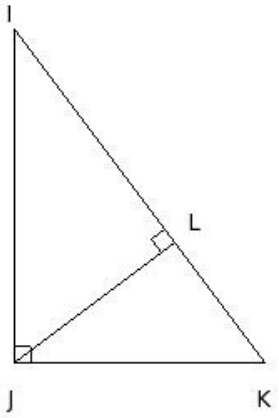
(i) 43.77° (ii) 42.77° (iii) 40.77° (iv) 41.77° (v) 44.77°

47. In the given figure, if CD ∥ EF then



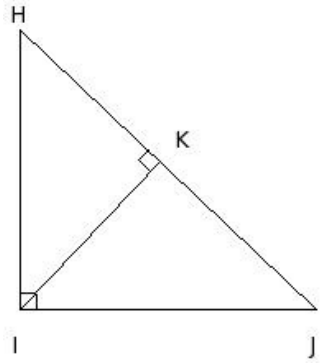
(i) △CDG ~ △GFE (ii) △GCD ~ △GEF (iii) △CDG ~ △GEF (iv) △GDC ~ △GFE (v) △CDG ~ △FEG

48. In the given figure, △IJK is right-angled at J. Also, JL ⊥ IK. If JK = 15 cm, JL = 12 cm, then find IJ.



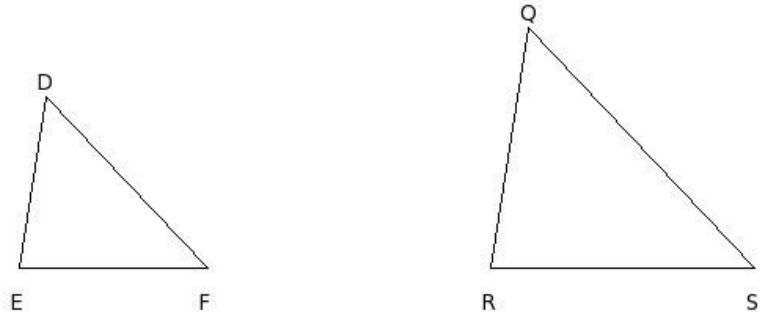
(i) 19.00 cm (ii) 18.00 cm (iii) 20.00 cm (iv) 21.00 cm (v) 22.00 cm

49. In the given figure, △HIJ is right-angled at I. Also, IK ⊥ HJ. If HK = 11.7 cm, KJ = 13.1 cm, then find IK.



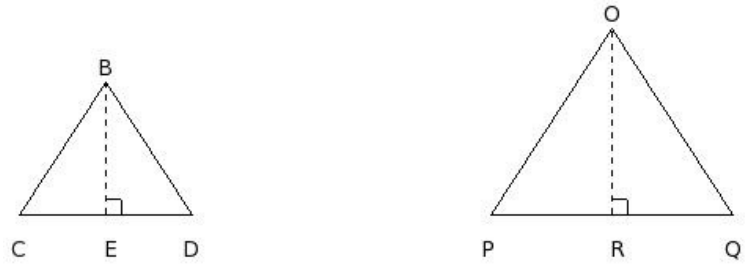
(i) 10.38 cm (ii) 11.38 cm (iii) 14.38 cm (iv) 12.38 cm (v) 13.38 cm

50. In the given figure, △DEF ~ △QRS and DE = 11 cm, QR = 15.4 cm.
If the area of the △DEF = 65.24 sq.cm, find the area of the △QRS



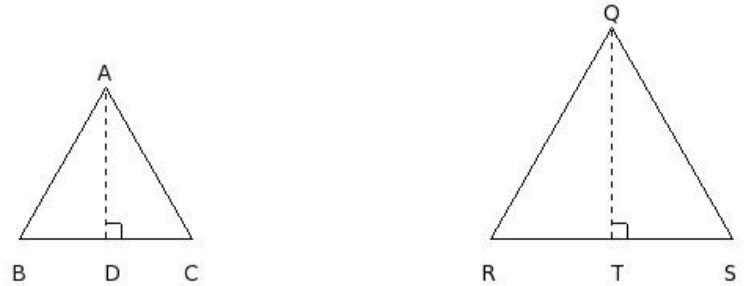
(i) 129.87 sq.cm (ii) 125.87 sq.cm (iii) 126.87 sq.cm (iv) 127.87 sq.cm (v) 128.87 sq.cm

51. In the given figure, △BCD ~ △OPQ and CD = 11 cm , PQ = 15.4 cm and
OR = 11.69 cm, find the area of the △BCD



(i) 45.93 sq.cm (ii) 47.93 sq.cm (iii) 44.93 sq.cm (iv) 46.93 sq.cm (v) 43.93 sq.cm

52. In the given figure, △ABC & △QRS are similar triangles. If the ratio of the heights AD : QT = 10 : 13, then the ratio of their areas is



(i) 100 sq.cm : 167 sq.cm (ii) 99 sq.cm : 169 sq.cm (iii) 101 sq.cm : 169 sq.cm (iv) 100 sq.cm : 169 sq.cm

(v) 100 sq.cm : 171 sq.cm

53. In the given figure, points J , K and L are the mid-points of sides HI, IG and GH of △GHI. Which of the following are true?

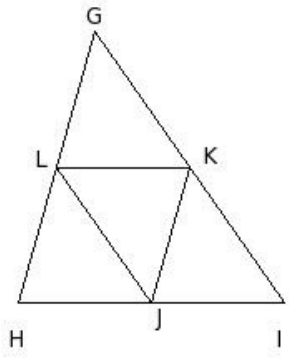
a) Area of △GHI = 4 times area of △JKL

b) Area of $\triangle GHI = \frac{1}{3}$ area of $\triangle JKL$

c) All four small triangles have equal areas

d) Area of trapezium HIKL is thrice the area of △GLK

e) Area of trapezium HIKL is $\frac{1}{4}$ the area of △GHI



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

54. In the given figure, points N , O and P are the mid-points of sides LM, MK and KL of △KLM. Which of the following are true?

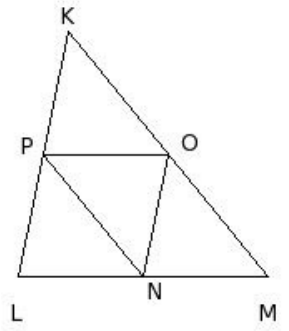
a) △PLN ~ △KLM

b) △ONM ~ △KLM

c) △KPO ~ △KLM

d) △NOP ~ △KLM

e) △NPO ~ △KLM

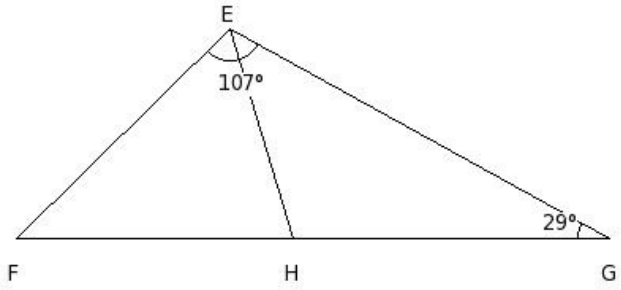


(i) {e,a} (ii) {e,b} (iii) {e,c} (iv) {e,d,a} (v) {a,b,c,d}

55. The perimeters of two similar triangles are 34 cm and 16 cm respectively. If one side of the first triangle is 14 cm, find the length of the corresponding side of the second triangle.

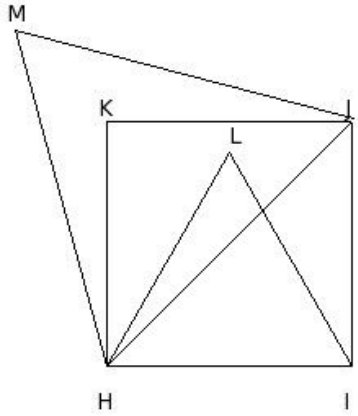
(i) 5.59 cm (ii) 7.59 cm (iii) 4.59 cm (iv) 8.59 cm (v) 6.59 cm

56. In the given figure, H is a point on side FG of △EFG such that ∠GEF = ∠EHG = 107° , ∠HGE = 29°. Find ∠GEH



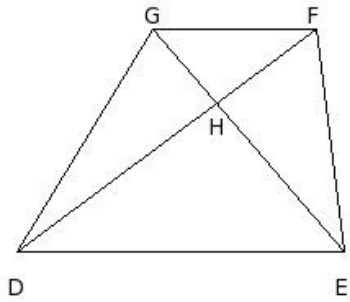
(i) 44° (ii) 45° (iii) 43° (iv) 46° (v) 42°

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

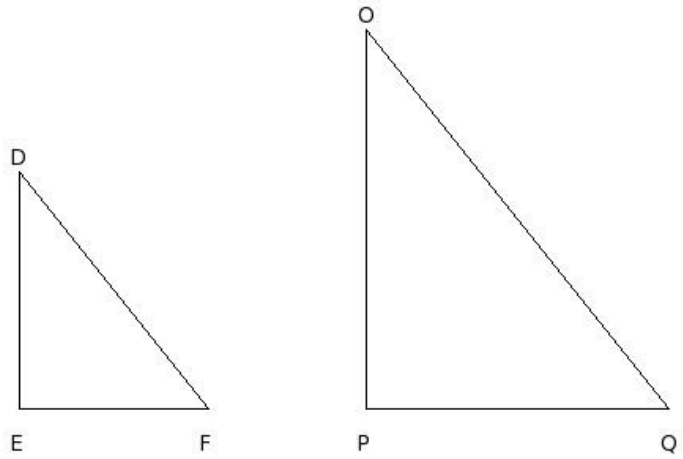
58. DEFG is a cyclic trapezium. Diagonals EG and DF intersect at H. If GD = 16 cm, find EF



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

A vertical stick 15 m long casts a shadow of 12 m long on the ground.

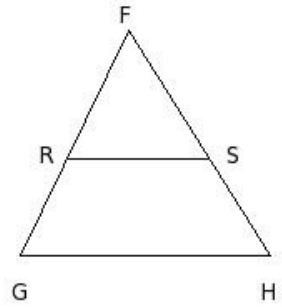
59. At the same time, a tower casts the shadow 96 m long on the ground.
Find the height of the tower.



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

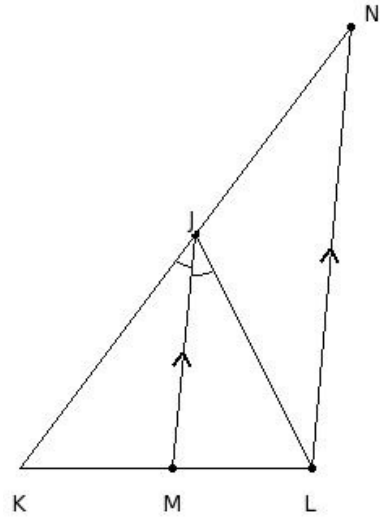
In the given figure, △FGH, RS ∥ GH such that

60. area of △FRS = area of RSHG. Find $\frac{FR}{FG}$



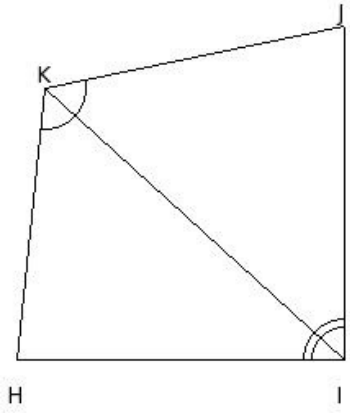
(i) $\frac{1}{2}\sqrt{2}$ (ii) $\frac{1}{2}\sqrt{-1}$ (iii) $\frac{1}{2}\sqrt{5}$ (iv) $\frac{1}{2}\sqrt{4}$ (v) 1

61. In the given figure, ∠MJK = ∠LJM and JM ∥ NL and JK = 18 cm, KM = 9 cm and ML = 9 cm. Find JN



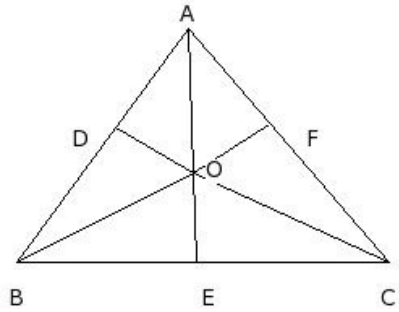
(i) 17.00 cm (ii) 18.00 cm (iii) 20.00 cm (iv) 16.00 cm (v) 19.00 cm

62. In the given figure, IK is the angular bisector of $\angle I$ & $\angle K$
$HI = 20$ cm, $IJ = 20$ cm and $JK = 19$ cm. Find KH



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

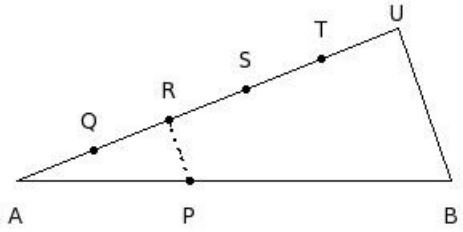
63. In the given figure, ABC is a triangle and 'O' is a point inside $\triangle ABC$. The angular bisector of $\angle BOA$, $\angle COB$ & $\angle AOC$ meet AB, BC & CA at D, E & F respectively . Then



(i) AD . BE . CF = OA . OB . OC (ii) AD . BE . CF = DB . EC . FA (iii) AD . BE . CF = AB . BC . CA

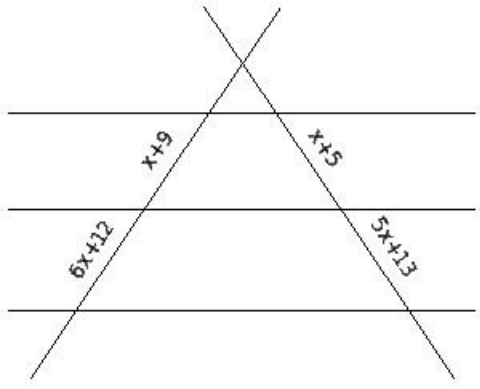
(iv) AD . BE . CF = DE . EF . FD (v) AD . BE . CF = OD . OE . OF

64. In the given figure, if A, Q, R, S, T, U are equidistant and RP ∥ UB and AB = 27 cm. Find AP



(i) 12.80 cm (ii) 9.80 cm (iii) 10.80 cm (iv) 8.80 cm (v) 11.80 cm

65. From the given figure and values, find x

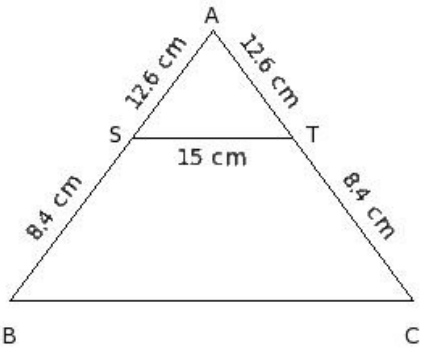


(i) (-3,19) (ii) (-2,20) (iii) (-1,19) (iv) (21,-1) (v) (-3,18)

66. The ratio of the bases of two triangles ABC and DEF is $9:3$.
If the triangles are equal in area, then the ratio of their heights is

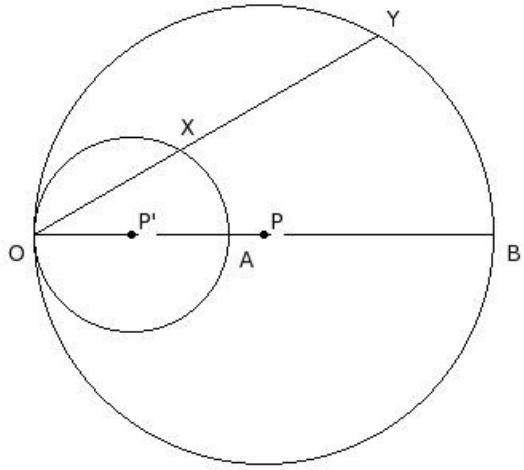
(i) $8:3$ (ii) $9:6$ (iii) $3:9$ (iv) $9:0$ (v) $10:3$

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



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

68. In the given figure, the two circles touch each other internally.
Diameter OB passes through the centre of the smaller circle.
OX = 11 cm, OY = 25 cm and radius of the inner circle is 6.1 cm.
Find the radius of the outer circle.



(i) 11.86 cm (ii) 12.86 cm (iii) 14.86 cm (iv) 15.86 cm (v) 13.86 cm

Assignment Key

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