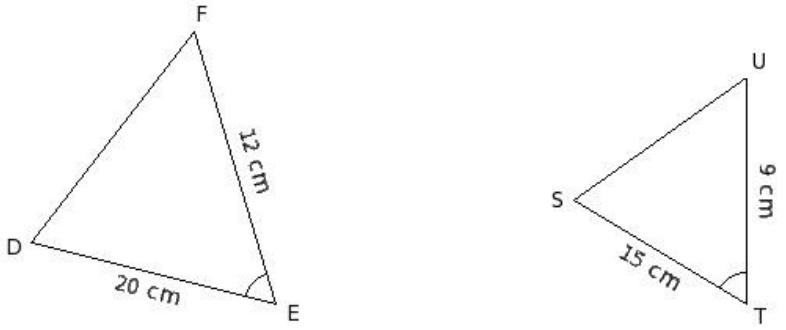
EduSahara™ Assignment

Name : Similarity of Triangles

Chapter : Similar Triangles

Grade : SSC Grade X

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

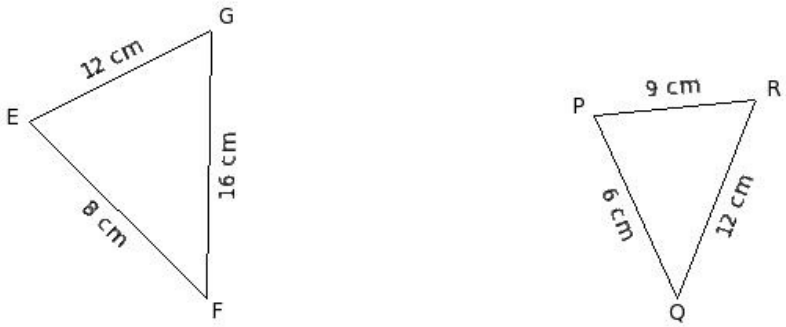


(i) AAA Similarity (ii) SSS Similarity (iii) not similar (iv) SAS Similarity

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

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

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

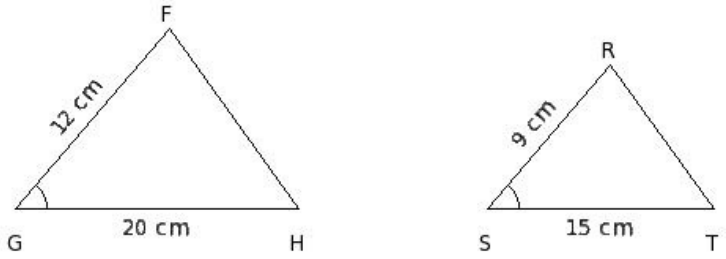


(i) SSS Similarity (ii) SAS Similarity (iii) not similar (iv) AAA Similarity

In the given figure, △FGH and △RST are such that

4. $\angle G = \angle S$ and $\frac{FG}{RS} = \frac{GH}{ST}$.

Identify the property by which the two triangles are similar

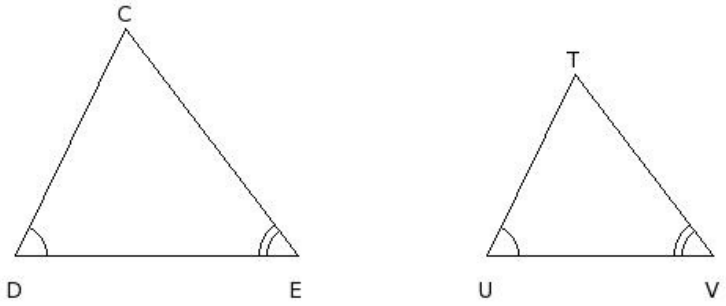


(i) SSS Similarity (ii) AAA Similarity (iii) not similar (iv) SAS Similarity

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

5. $\angle D = \angle U$ and $\angle E = \angle V$.

Identify the property by which the two triangles are similar

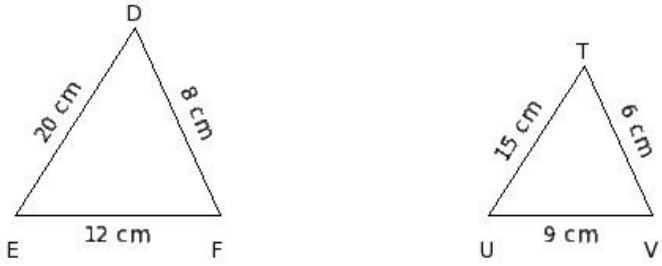


(i) not similar (ii) AAA Similarity (iii) SSS Similarity (iv) SAS Similarity

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

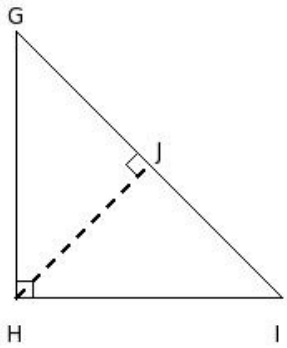
6. $\frac{DE}{TU} = \frac{EF}{UV} = \frac{FD}{VT}$.

Identify the property by which the two triangles are similar



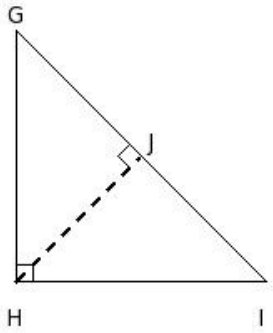
(i) AAA Similarity (ii) not similar (iii) SAS Similarity (iv) SSS Similarity

7. In the given figure, △GHI is isosceles right-angled at H and HJ ⊥ IG. ∠I =



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

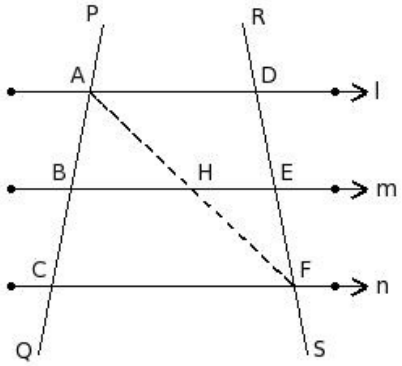
8. In the given figure, △GHI is isosceles right-angled at H and HJ ⊥ IG. ∠IGH ≠



(i) ∠IJH (ii) ∠HIJ (iii) ∠JHI (iv) ∠GHJ (v) ∠JGH

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

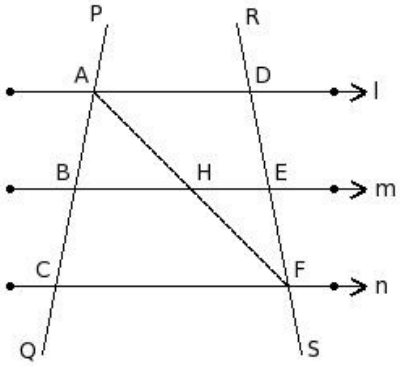
9. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.
△ACF ~



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

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

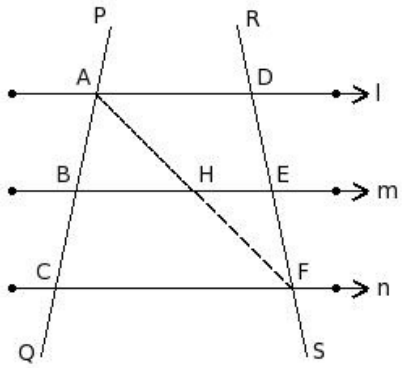
10. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.
∠FAC =



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

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

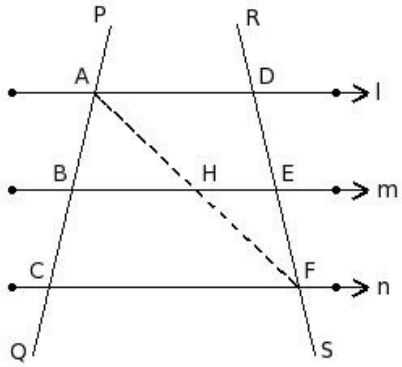
11. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.
∠FDA =



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

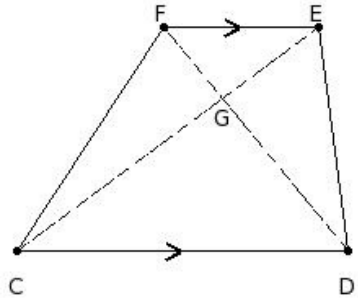
In the given figure, three lines l , m and n are such that l ∥ m ∥ n.

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



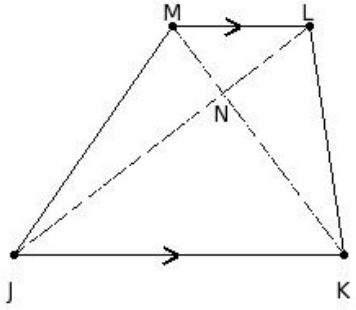
(i) ∠CFA (ii) ∠HFE (iii) ∠AFD (iv) ∠DAF (v) ∠EHF

13. In the given figure, CDEF is a trapezium in which
CD ∥ EF and the diagonals DF and CE intersect at G .
If GC = (3x+12) cm, DG = (2x+7) cm, GE = (2x+8) cm and
FG = (x+9) cm, find the value of x



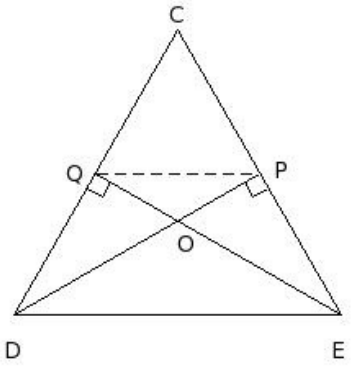
(i) (15,-2) (ii) (-1,13) (iii) (-4,12) (iv) (-3,14) (v) (-4,13)

14. In the given figure, JKLM is a trapezium in which JK ∥ LM and the diagonals KM and JL intersect at N. △NJK ~



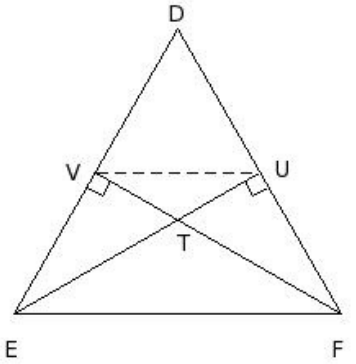
(i) △MJK (ii) △NMJ (iii) △NKL (iv) △KLM (v) △NLM

15. In the given figure, the altitudes PD and EQ of △CDE meet at O. △OQP ~



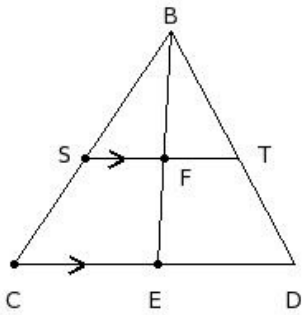
(i) △PED (ii) △ODE (iii) △PEO (iv) △QDO (v) △QDE

16. In the given figure, the altitudes UE and FV of △DEF meet at T. ∠UTF =



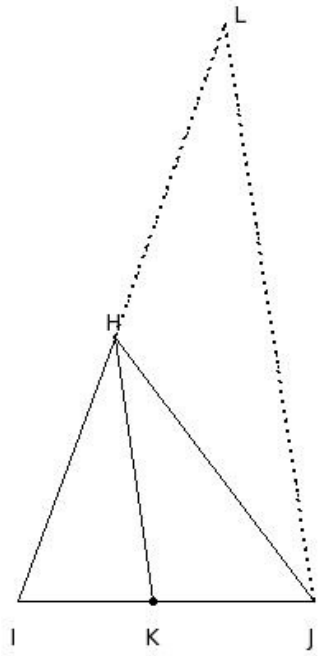
(i) ∠ETV (ii) ∠VET (iii) ∠TVE (iv) ∠FUT (v) ∠TFU

17. In the given figure, ST ∥ CD , and median BE bisects ST. △BFT ~



(i) △BSF (ii) △BCD (iii) △CDB (iv) △BCE (v) △BED

18. 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 . ∠JLH =



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

19. Which of the following are true?

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

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

20. Which of the following are true?

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

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

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

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

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

22. Which of the following are true?

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

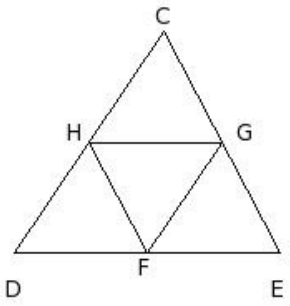
(i) {c,a,b} (ii) {a,b,d} (iii) {c,b} (iv) {c,d} (v) {c,a}

23. Which of the following are true?

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

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

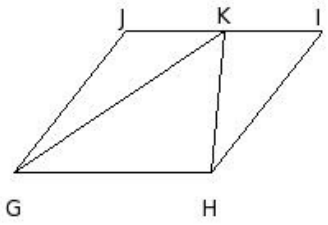
24. In the given figure, the area of the $\triangle$CDE is x sq.cm. F,G,H are the mid-points of the sides DE , EC and CD respectively. The area of the $\triangle$FGH is



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

(v) $\frac{1}{2}$ of area of $\triangle$CDE

25. In the given figure, the parallelogram GHIJ and the triangle $\triangle$KGH are on the same bases and between the same parallels.
The area of the $\triangle$KGH is x sq.cm. The area of the parallelogram is



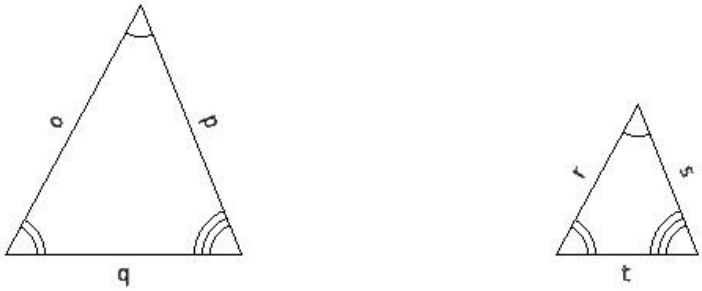
(i) $\frac{5}{4}$ the area of the triangle (ii) twice the area of the triangle (iii) $\frac{3}{2}$ the area of the triangle

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

26. If the ratio of the bases of two triangles is F : G and the ratio of the corresponding heights is H : I , the ratio of their areas in the same order is

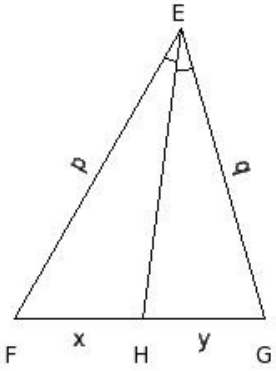
(i) FH : GI (ii) GH : FI (iii) FG : HI (iv) FI : GH (v) HI : FG

27. In the given two similar triangles, if o = 18 cm, p = 17 cm, q = 15 cm, s = 10.2 cm, find t



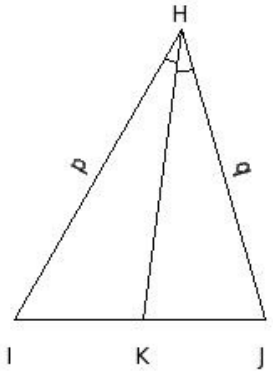
(i) 8.00 cm (ii) 11.00 cm (iii) 10.00 cm (iv) 9.00 cm (v) 7.00 cm

28. In the given figure, given ∠HEF = ∠GEH, x : y = 7.89 cm : 7.11 cm and q = 18 cm, find p =



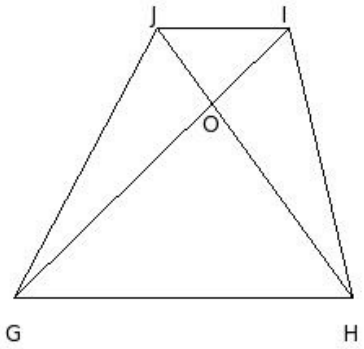
(i) 22.00 cm (ii) 21.00 cm (iii) 19.00 cm (iv) 20.00 cm (v) 18.00 cm

29. In the given figure, given ∠KHI = ∠JHK, p = 7.89 cm, q = 7.11 cm and IJ = 15 cm, find KJ =



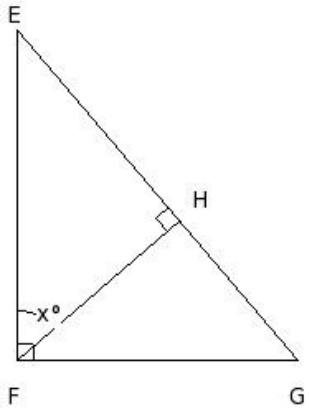
(i) 8.11 cm (ii) 7.11 cm (iii) 5.11 cm (iv) 6.11 cm (v) 9.11 cm

30. In the given figure, GHIJ is a trapezium where OG = 15 cm , OI = 5 cm and OJ = 5 cm . Find OH =



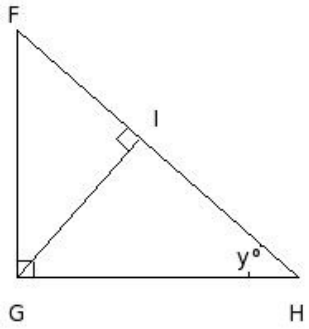
(i) 14 cm (ii) 16 cm (iii) 15 cm (iv) 17 cm (v) 13 cm

31. In the given figure, ∠HEF = 40.73°, find the value of x =



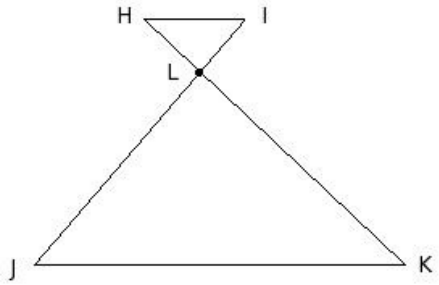
(i) 50.27° (ii) 47.27° (iii) 48.27° (iv) 51.27° (v) 49.27°

32. In the given figure, ∠IGH = 48.62°, find the value of y =



(i) 43.38° (ii) 39.38° (iii) 40.38° (iv) 42.38° (v) 41.38°

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



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

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

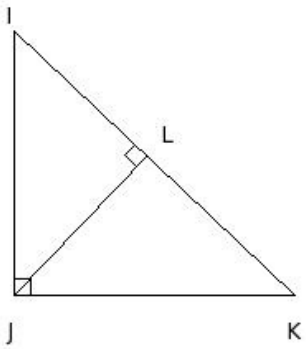
a) $JK^2 = IK.IL$

b) $JK^2 = KI.KL$

c) $IJ^2 = IK.IL$

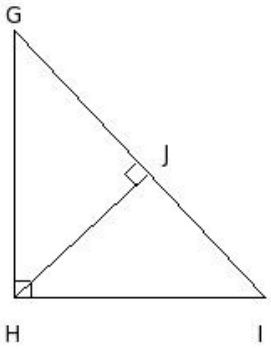
d) $JL^2 = IL.LK$

e) $IJ^2 = KI.KL$



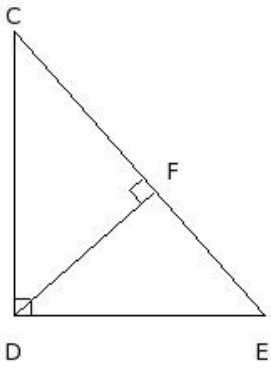
(i) {e,c} (ii) {a,b,c} (iii) {a,b} (iv) {a,e,d} (v) {b,c,d}

35. In the given figure, △GHI is right-angled at H. Also, HJ ⊥ GI. If GH = 16 cm, HI = 15 cm, then find HJ.



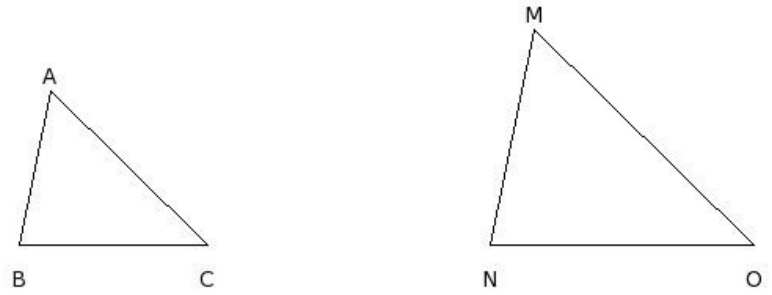
(i) 9.94 cm (ii) 11.94 cm (iii) 8.94 cm (iv) 12.94 cm (v) 10.94 cm

36. In the given figure, △CDE is right-angled at D. Also, DF ⊥ CE. If FE = 9.9 cm, DF = 11.26 cm, then find CF.



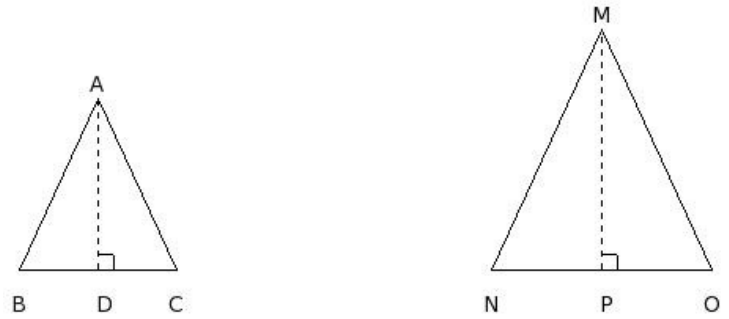
(i) 10.80 cm (ii) 12.80 cm (iii) 11.80 cm (iv) 13.80 cm (v) 14.80 cm

37. In the given figure, $\triangle ABC \sim \triangle MNO$ and AB = 10 cm, MN = 14 cm.
If the area of the $\triangle MNO = 115.22$ sq.cm, find the area of the $\triangle ABC$



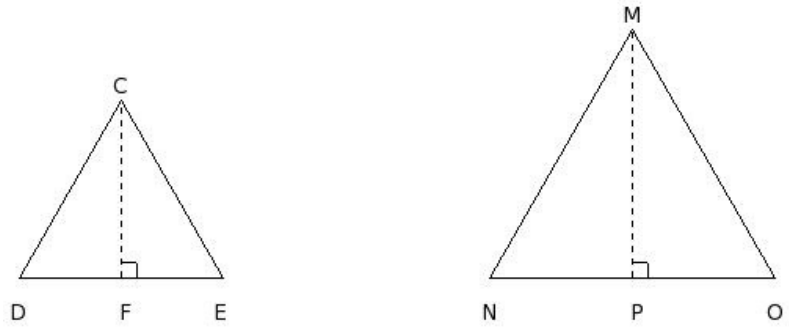
(i) 58.79 sq.cm (ii) 56.79 sq.cm (iii) 60.79 sq.cm (iv) 57.79 sq.cm (v) 59.79 sq.cm

38. In the given figure, $\triangle ABC \sim \triangle MNO$ and BC = 10 cm , NO = 14 cm and
$AD = 10.91$ cm, find the area of the $\triangle MNO$



(i) 105.91 sq.cm (ii) 107.91 sq.cm (iii) 106.91 sq.cm (iv) 108.91 sq.cm (v) 104.91 sq.cm

39. In the given figure, $\triangle CDE$ & $\triangle MNO$ are similar triangles. If the ratio of the heights CF : MP = 11 : 16, then the ratio of their areas is



(i) 121 sq.cm : 256 sq.cm (ii) 121 sq.cm : 259 sq.cm (iii) 120 sq.cm : 256 sq.cm (iv) 122 sq.cm : 256 sq.cm

(v) 121 sq.cm : 253 sq.cm

40. In the given figure, points O , P and Q are the mid-points of sides MN, NL and LM of △LMN. Which of the following are true?

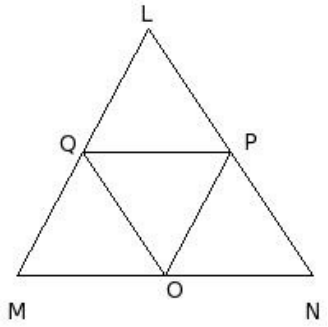
a) Area of trapezium MNPQ is $\frac{1}{4}$ the area of △LMN

b) Area of △LMN = 4 times area of △OPQ

c) Area of trapezium MNPQ is thrice the area of △LQP

d) All four small triangles have equal areas

e) Area of △LMN = $\frac{1}{3}$ area of △OPQ



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

41. 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?

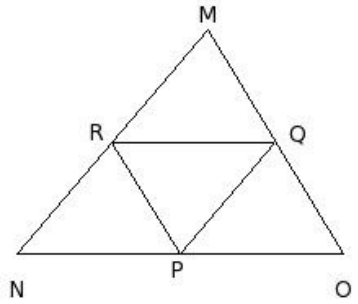
a) △MRQ ~ △MNO

b) △RNP ~ △MNO

c) △PQR ~ △MNO

d) △PRQ ~ △MNO

e) △QPO ~ △MNO

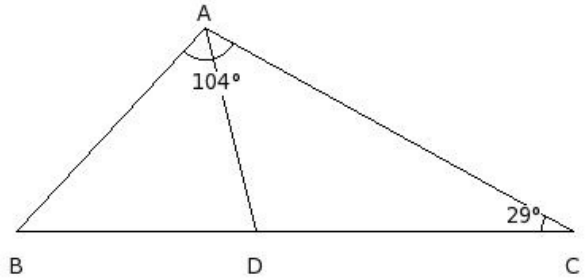


(i) {d,e,a} (ii) {d,a} (iii) {d,c} (iv) {a,b,c,e} (v) {d,b}

42. The perimeters of two similar triangles are 31 cm and 19 cm respectively. If one side of the first triangle is 15 cm, find the length of the corresponding side of the second triangle.

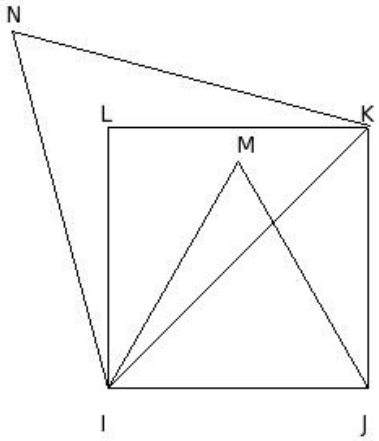
(i) 9.19 cm (ii) 11.19 cm (iii) 7.19 cm (iv) 8.19 cm (v) 10.19 cm

43. In the given figure, D is a point on side BC of △ABC such that ∠CAB = ∠ADC = 104° , ∠DCA = 29°. Find ∠CAD



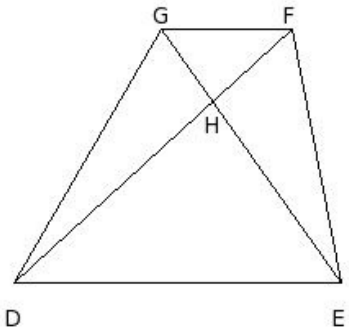
(i) 45° (ii) 48° (iii) 46° (iv) 47° (v) 49°

44. IJKL is a square and △IJM is an equilateral triangle. Also, △IKN is an equilateral triangle. If area of △IJM is 'a' sq.units, then the area of △IKN is



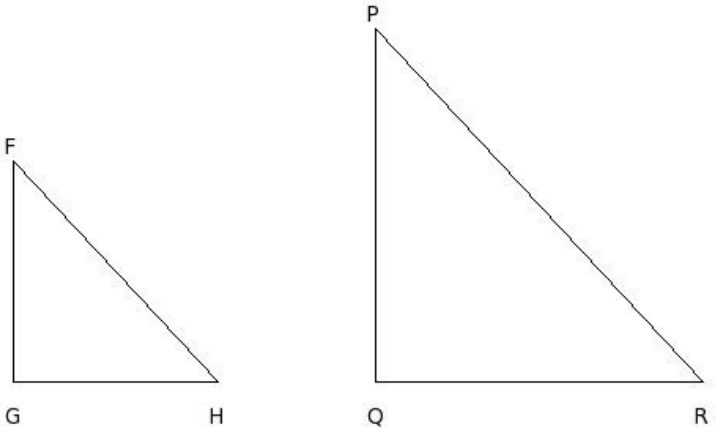
(i) a^2 sq.units (ii) $\frac{1}{2}\sqrt{3}$ a sq.units (iii) $\sqrt{3}$ a sq.units (iv) 2a sq.units (v) $\frac{1}{2}$ a sq.units

45. DEFG is a cyclic trapezium. Diagonals EG and DF intersect at H. If GD = 18 cm, find EF



(i) 18 cm (ii) 19 cm (iii) 17 cm (iv) 16 cm (v) 20 cm

A vertical stick 14 m long casts a shadow of 13 m long on the ground.
46. At the same time, a tower casts the shadow 104 m long on the ground.
Find the height of the tower.



(i) 112 m (ii) 113 m (iii) 111 m (iv) 114 m (v) 110 m

47. In the given figure, △ACB is right-angled at C, CD ⊥ AB.
$AB = c, CB = a, AC = b$ and $CD = p$. Which of the following are true?

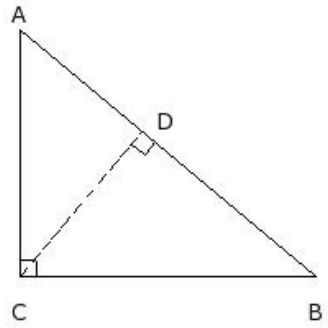
a) $\frac{1}{a^2} + \frac{1}{b^2} + \frac{1}{c^2} = \frac{1}{p^2}$

b) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{p^2}$

c) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{c^2} + \frac{1}{p^2}$

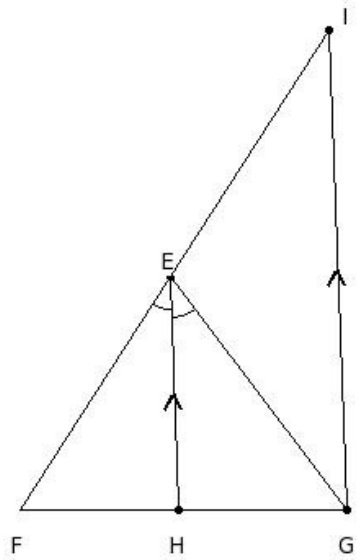
d) $ab = pc$

e) $a^2 + b^2 = c^2$



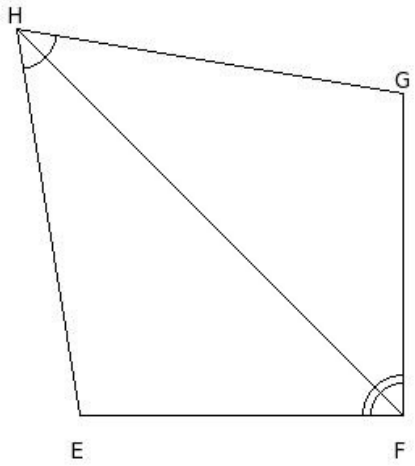
(i) {a,b,d} (ii) {a,c,e} (iii) {b,d,e} (iv) {c,d} (v) {a,b}

48. In the given figure, ∠HEF = ∠GEH and EH ∥ IG and EF = 17 cm, FH = 10 cm and HG = 10 cm. Find EI



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

49. In the given figure, FH is the angular bisector of $\angle F$ & $\angle H$
$EF = 20$ cm, $FG = 20$ cm and $GH = 24$ cm. Find HE

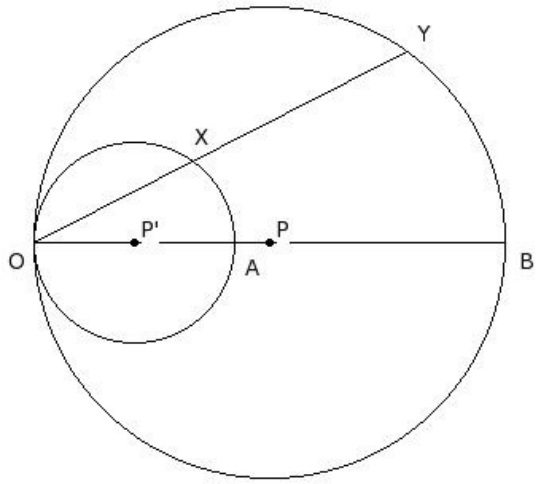


(i) 22.00 cm (ii) 25.00 cm (iii) 24.00 cm (iv) 23.00 cm (v) 26.00 cm

50. The ratio of the bases of two triangles ABC and DEF is 5 : 6 .
If the triangles are equal in area, then the ratio of their heights is

(i) 6 : 6 (ii) 6 : 5 (iii) 5 : 9 (iv) 4 : 6 (v) 5 : 3

51. 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 = 27 cm and radius of the inner circle is 6.3 cm.
Find the radius of the outer circle.



(i) 16.46 cm (ii) 15.46 cm (iii) 17.46 cm (iv) 14.46 cm (v) 13.46 cm

Assignment Key

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