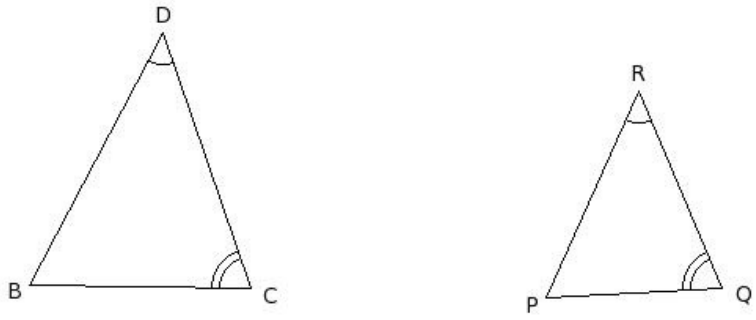
1. Identify the property by which the two given triangles are similar

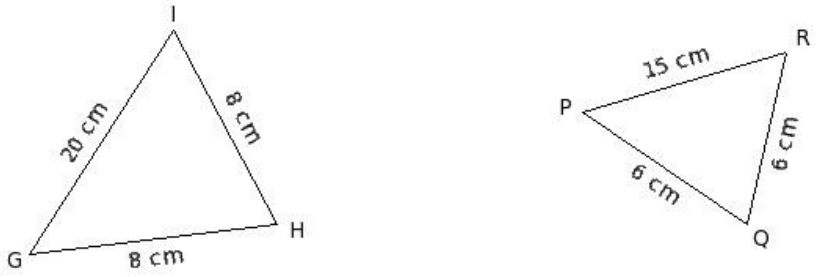
(i) AAA Similarity (ii) SSS Similarity (iii) not similar (iv) SAS Similarity

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



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

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

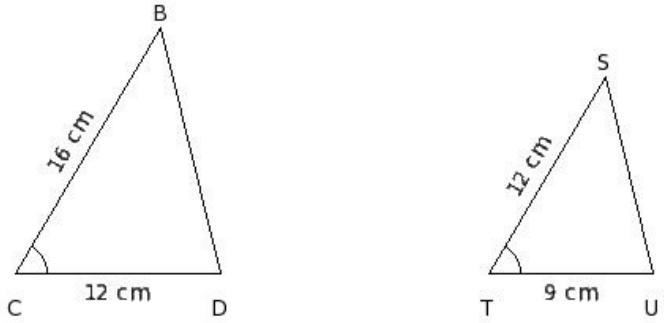


(i) not similar (ii) SSS Similarity (iii) AAA Similarity (iv) SAS Similarity

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

4. $\angle C = \angle T$ and $\frac{BC}{ST} = \frac{CD}{TU}$.

Identify the property by which the two triangles are similar

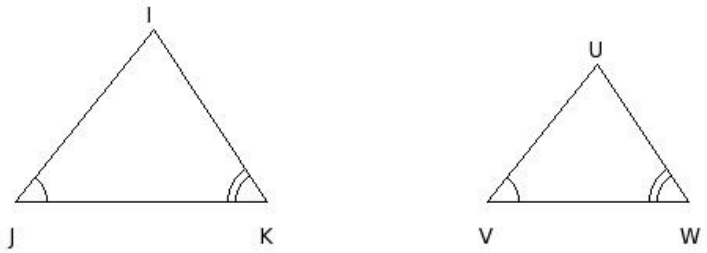


(i) AAA Similarity (ii) not similar (iii) SAS Similarity (iv) SSS Similarity

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

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

Identify the property by which the two triangles are similar

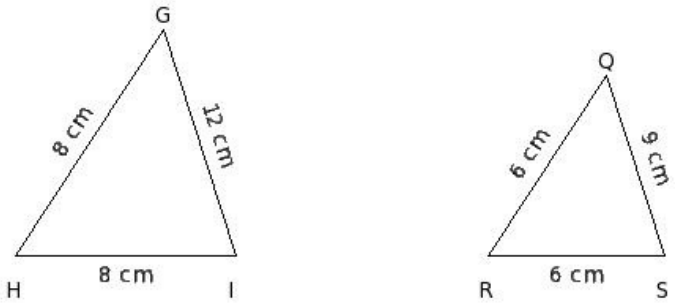


(i) not similar (ii) SSS Similarity (iii) AAA Similarity (iv) SAS Similarity

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

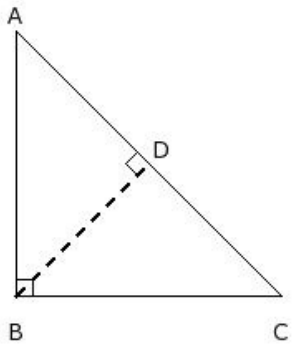
6. $\frac{GH}{QR} = \frac{HI}{RS} = \frac{IG}{SQ}$.

Identify the property by which the two triangles are similar



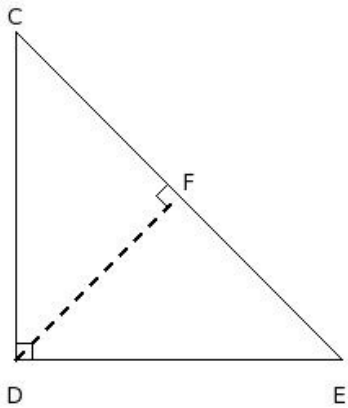
(i) not similar (ii) SAS Similarity (iii) SSS Similarity (iv) AAA Similarity

7. In the given figure, △ABC is isosceles right-angled at B and BD ⊥ CA. ∠C =



(i) ∠F (ii) ∠B (iii) ∠D (iv) ∠A (v) ∠E

8. In the given figure, △CDE is isosceles right-angled at D and DF ⊥ EC. ∠CDE =

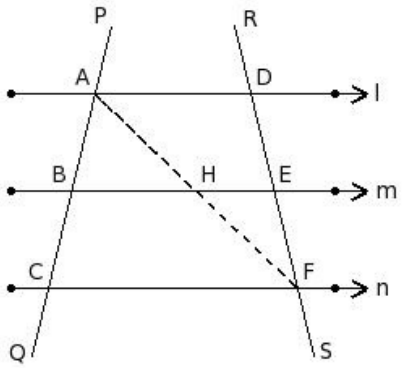


(i) ∠DEF (ii) ∠EFD (iii) ∠FCD (iv) ∠CDF (v) ∠FDE

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.

△FDA ~

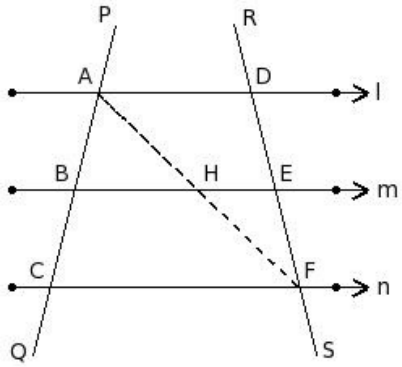


(i) △ACF (ii) △DAE (iii) △ABH (iv) △FEH (v) △DCF

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.

∠AFD =

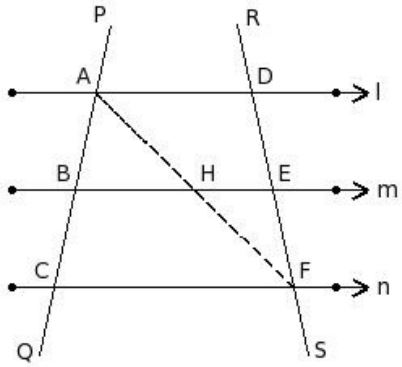


(i) ∠FDA (ii) ∠FAC (iii) ∠HAB (iv) ∠FEH (v) ∠HFE

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.

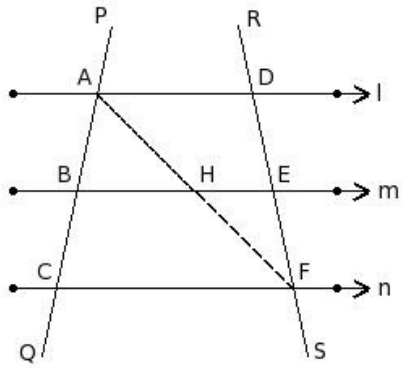
∠FEH =



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

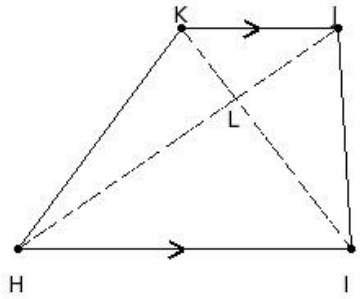
In the given figure, three lines l , m and n are such that l ∥ m ∥ n.

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



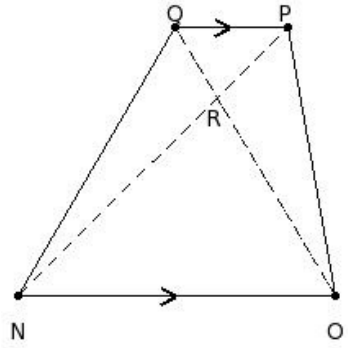
(i) ∠HFE (ii) ∠AFD (iii) ∠BHA (iv) ∠EHF (v) ∠CFA

13. In the given figure, HIJK is a trapezium in which
HI ∥ JK and the diagonals IK and HJ intersect at L.
If $LH=(5x+10)$ cm, $IL=(6x+12)$ cm, $LJ=(2x+1)$ cm and
$KL=(2x+10)$ cm, find the value of x



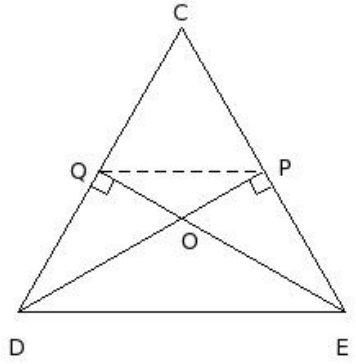
(i) (22,-3) (ii) (22,-2) (iii) (25,-2) (iv) (23,-1) (v) (0,24)

14. In the given figure, NOPQ is a trapezium in which
NO ∥ PQ and the diagonals OQ and NP intersect at R. △RNO ~



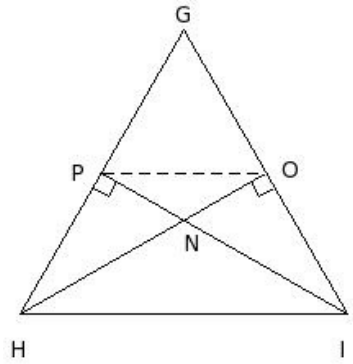
(i) △ROP (ii) △QNO (iii) △OPQ (iv) △RPQ (v) △RQN

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



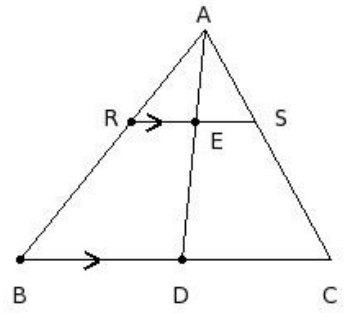
(i) △ODE (ii) △QDO (iii) △QDE (iv) △PEO (v) △PED

16. In the given figure, the altitudes OH and IP of △GHI meet at N. ∠NIO =



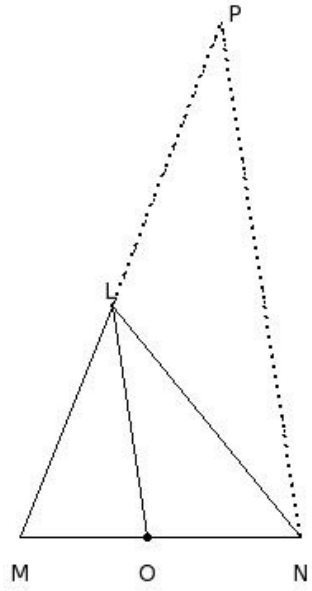
(i) ∠HNP (ii) ∠PHN (iii) ∠ONI (iv) ∠NPH (v) ∠ION

17. In the given figure, RS ∥ BC , and median AD bisects RS. △ABD ~



(i) △AES (ii) △ARE (iii) △ADC (iv) △ABC (v) △BCA

18. In the given figure, △LMN is a triangle in which LO is the internal bisector of ∠L and NP ∥ OL meeting ML produced at P . ∠LNP =



(i) ∠ONL (ii) ∠LON (iii) ∠PLN (iv) ∠MOL (v) ∠OLM

19. Which of the following are true?

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

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

20. Which of the following are true?

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

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

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

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

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

22. Which of the following are true?

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

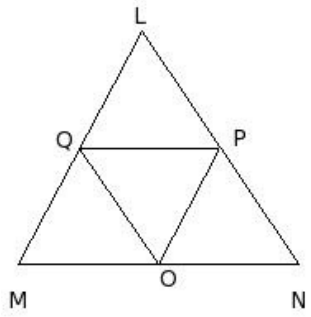
(i) {c,a} (ii) {a,b,d} (iii) {c,b} (iv) {c,a,b} (v) {c,d}

23. Which of the following are true?

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

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

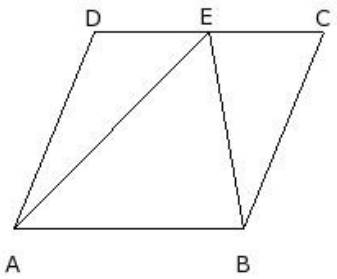
24. In the given figure, the area of the $\triangle$LMN is x sq.cm. O,P,Q are the mid-points of the sides MN , NL and LM respectively. The area of the $\triangle$OPQ is



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

(v) $\frac{1}{3}$ of area of $\triangle$LMN

25. 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



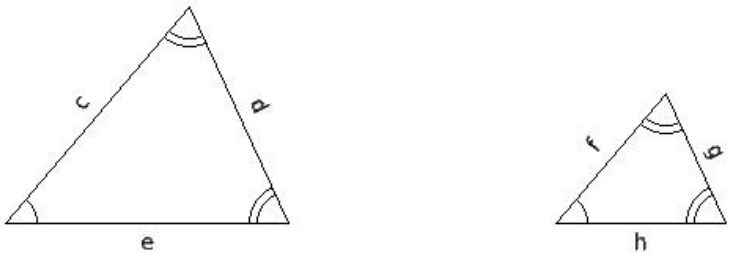
(i) $\frac{3}{2}$ the area of the triangle (ii) $\frac{4}{3}$ the area of the triangle (iii) twice the area of the triangle

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

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

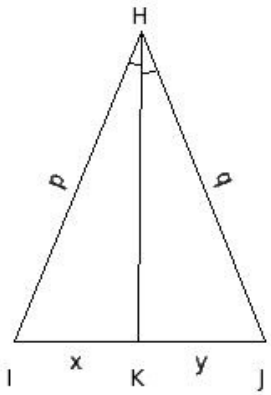
(i) EF : GH (ii) GH : EF (iii) EH : FG (iv) FG : EH (v) EG : FH

27. In the given two similar triangles, if c = 18 cm, d = 15 cm, e = 18 cm, g = 9 cm, find h



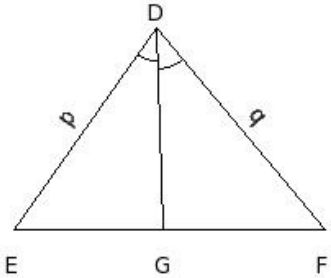
(i) 11.80 cm (ii) 9.80 cm (iii) 12.80 cm (iv) 8.80 cm (v) 10.80 cm

28. In the given figure, given ∠KHI = ∠JHK, x : y = 7.5 cm : 7.5 cm and p = 20 cm, find q =



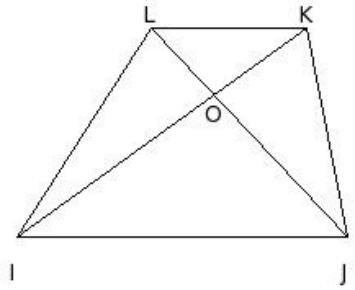
(i) 19.00 cm (ii) 20.00 cm (iii) 22.00 cm (iv) 21.00 cm (v) 18.00 cm

29. In the given figure, given ∠GDE = ∠FDG, p = 9.19 cm, q = 9.81 cm and EF = 19 cm, find GF =



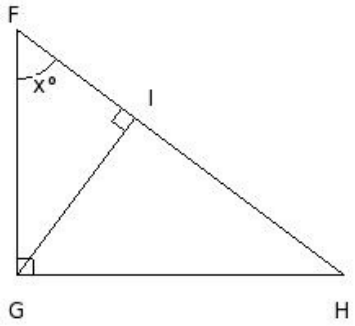
(i) 7.81 cm (ii) 9.81 cm (iii) 11.81 cm (iv) 10.81 cm (v) 8.81 cm

30. In the given figure, IJKL is a trapezium where OJ = 13 cm , OK = 4 cm and OL = 4 cm . Find OI =



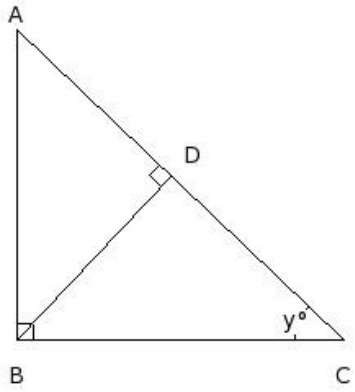
(i) 12 cm (ii) 13 cm (iii) 14 cm (iv) 15 cm (v) 11 cm

31. In the given figure, ∠FGI = 36.87°, find the value of x =



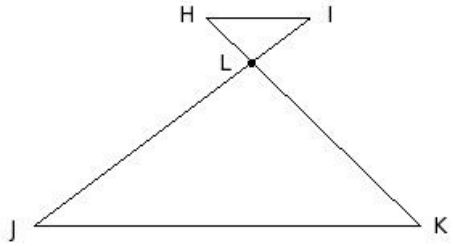
(i) 53.13° (ii) 52.13° (iii) 55.13° (iv) 54.13° (v) 51.13°

32. In the given figure, ∠DBC = 46.75°, find the value of y =



(i) 44.25° (ii) 41.25° (iii) 43.25° (iv) 42.25° (v) 45.25°

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



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

34. In the given figure, △GHI is right-angled at H. Also, HJ ⊥ GI. Which of the following are true?

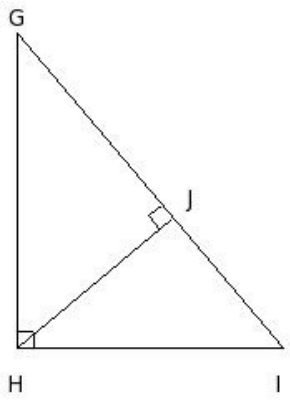
a) $HI^2 = GI \cdot GJ$

b) $GH^2 = GI \cdot GJ$

c) $HJ^2 = GJ \cdot JI$

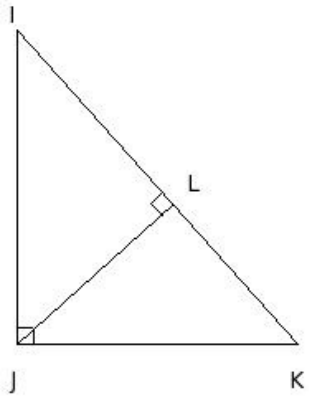
d) $HI^2 = IG \cdot IJ$

e) $GH^2 = IG \cdot IJ$



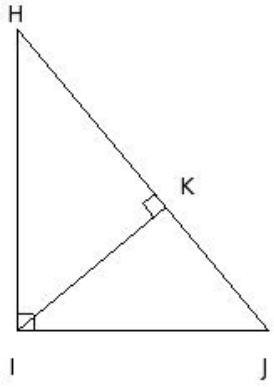
(i) {e,c} (ii) {a,e,d} (iii) {a,b} (iv) {a,b,c} (v) {b,c,d}

35. In the given figure, △IJK is right-angled at J. Also, JL ⊥ IK. If IJ = 19 cm, JK = 17 cm, then find JL.



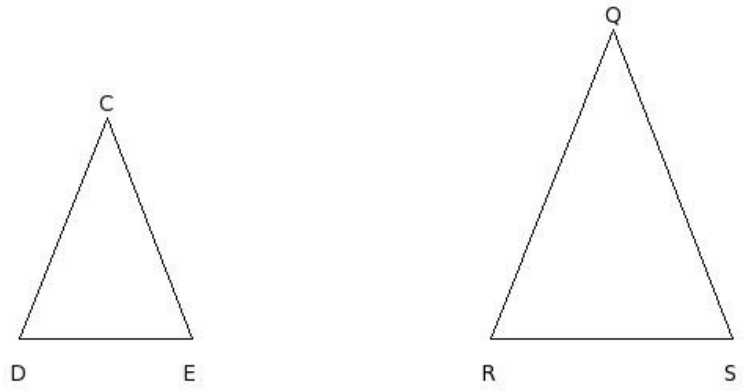
(i) 13.67 cm (ii) 10.67 cm (iii) 11.67 cm (iv) 12.67 cm (v) 14.67 cm

36. In the given figure, △HIJ is right-angled at I. Also, IK ⊥ HJ. If KJ = 9.6 cm, IK = 11.51 cm, then find HK.



(i) 12.80 cm (ii) 13.80 cm (iii) 14.80 cm (iv) 11.80 cm (v) 15.80 cm

37. In the given figure, △CDE ~ △QRS and CD = 15 cm, QR = 21 cm.
If the area of the △CDE = 76.75 sq.cm, find the area of the △QRS

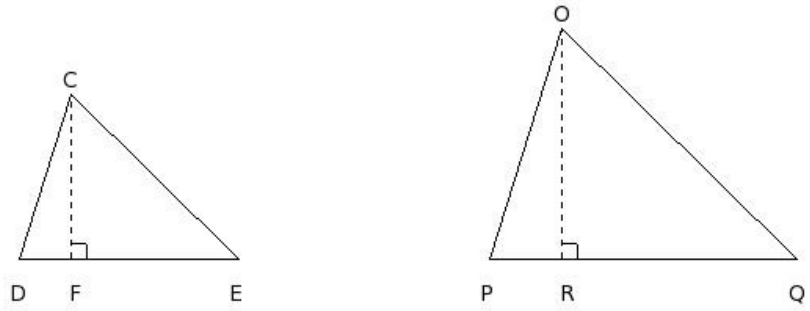


(i) 150.44 sq.cm (ii) 152.44 sq.cm (iii) 148.44 sq.cm (iv) 151.44 sq.cm (v) 149.44 sq.cm

38. In the given figure, △BCD ~ △QRS and CD = 10 cm , RS = 14 cm and
BE = 9.8 cm, find the area of the △QRS

(i) 97.02 sq.cm (ii) 98.02 sq.cm (iii) 96.02 sq.cm (iv) 95.02 sq.cm (v) 94.02 sq.cm

39. In the given figure, △CDE & △OPQ are similar triangles. If the ratio of the heights CF : OR = 10 : 15, then the ratio of their areas is



(i) 100 sq.cm : 225 sq.cm (ii) 99 sq.cm : 225 sq.cm (iii) 101 sq.cm : 225 sq.cm (iv) 100 sq.cm : 228 sq.cm

(v) 100 sq.cm : 223 sq.cm

40. 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?

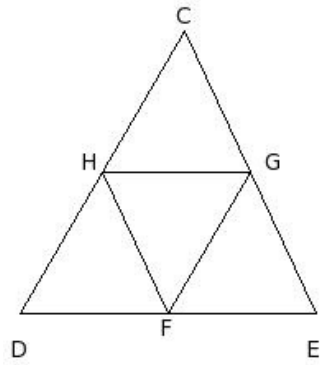
a) Area of trapezium DEGH is thrice the area of △CHG

b) Area of trapezium $DEGH$ is $\frac{1}{4}$ the area of $\triangle CDE$

c) Area of △CDE = 4 times area of △FGH

d) Area of $\triangle CDE = \frac{1}{3}$ area of $\triangle FGH$

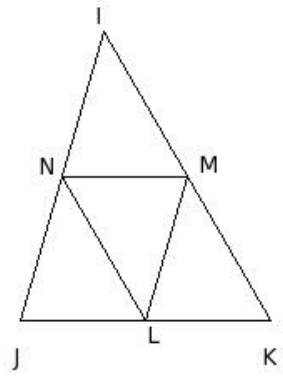
e) All four small triangles have equal areas



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

41. In the given figure, points L , M and N are the mid-points of sides JK, KI and IJ of △IJK. Which of the following are true?

a) △LNM ~ △IJK
b) △INM ~ △IJK
c) △NJL ~ △IJK
d) △LMN ~ △IJK
e) △MLK ~ △IJK

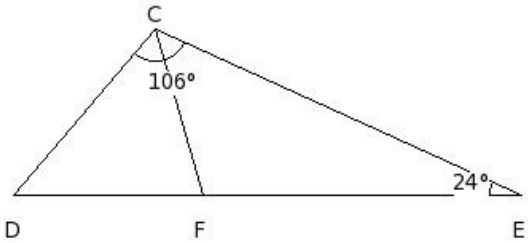


(i) {a,e,b} (ii) {a,b} (iii) {a,c} (iv) {b,c,d,e} (v) {a,d}

42. The perimeters of two similar triangles are 27 cm and 21 cm respectively. If one side of the first triangle is 9 cm, find the length of the corresponding side of the second triangle.

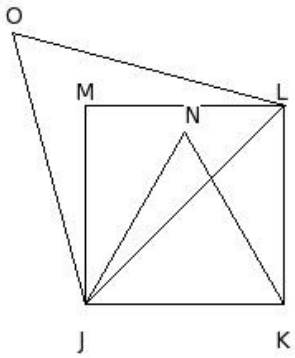
(i) 8.00 cm (ii) 5.00 cm (iii) 6.00 cm (iv) 9.00 cm (v) 7.00 cm

43. In the given figure, F is a point on side DE of △CDE such that ∠ECD = ∠CFE = 106° , ∠FEC = 24°. Find ∠ECF



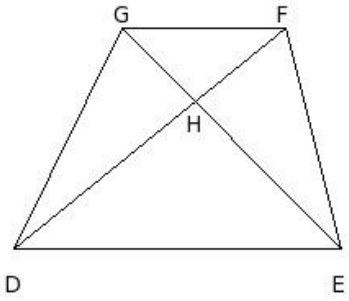
(i) 51° (ii) 49° (iii) 50° (iv) 52° (v) 48°

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



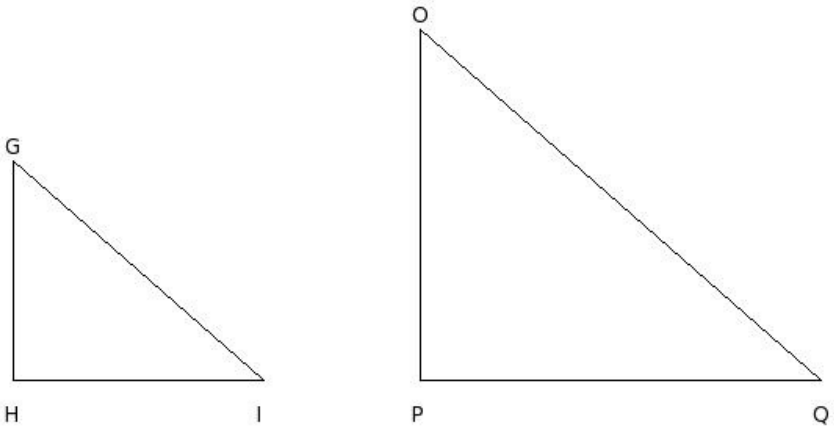
(i) a^2 sq.units (ii) $\frac{1}{2}\sqrt{3}$ a sq.units (iii) 2a sq.units (iv) $\frac{1}{2}$ a sq.units (v) $\sqrt{3}$ a sq.units

45. DEFG is a cyclic trapezium. Diagonals EG and DF intersect at H. If GD = 15 cm, find EF



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

A vertical stick 14 m long casts a shadow of 16 m long on the ground.
46. At the same time, a tower casts the shadow 128 m long on the ground.
Find the height of the tower.



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

47. In the given figure, △CED is right-angled at E, EF ⊥ CD.
$CD = c, ED = a, CE = b$ and $EF = p$. Which of the following are true?

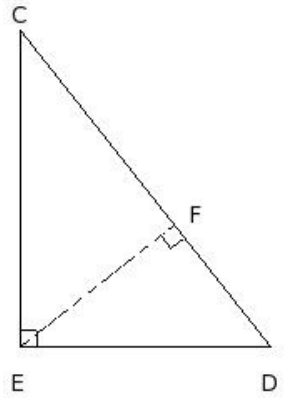
a) $a^2 + b^2 = c^2$

b) $ab = pc$

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

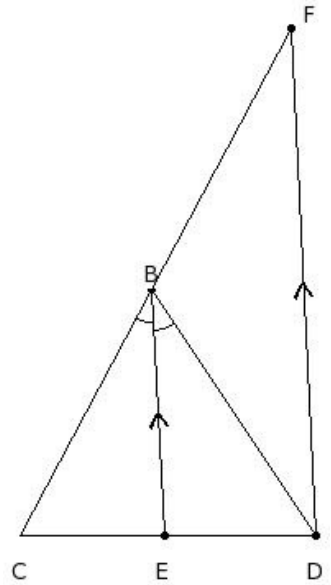
d) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{c^2} + \frac{1}{p^2}$

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



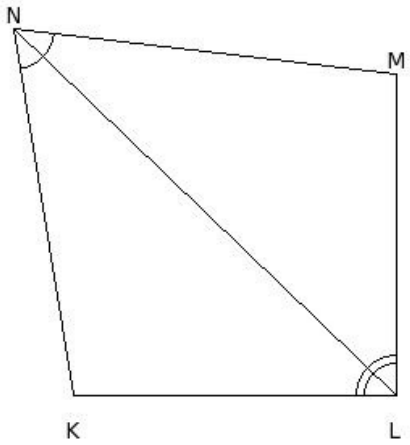
(i) {a,b,c} (ii) {d,a} (iii) {d,e,c} (iv) {d,a,b} (v) {e,b}

48. In the given figure, ∠EBC = ∠DBE and BE ∥ FD and BC = 17 cm, CE = 9 cm and ED = 9 cm. Find BF



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

49. In the given figure, LN is the angular bisector of $\angle L$ & $\angle N$
$KL = 20$ cm, $LM = 20$ cm and $MN = 24$ cm. Find NK

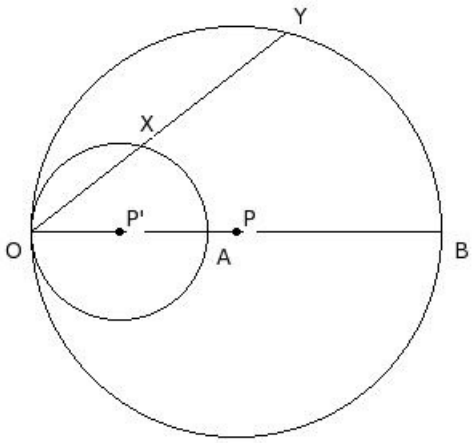


(i) 22.00 cm (ii) 26.00 cm (iii) 23.00 cm (iv) 25.00 cm (v) 24.00 cm

50. The ratio of the bases of two triangles ABC and DEF is 3:10 .
If the triangles are equal in area, then the ratio of their heights is

(i) 3:8 (ii) 2:10 (iii) 4:10 (iv) 3:12 (v) 10:3

51. In the given figure, the two circles touch each other internally.
Diameter OB passes through the centre of the smaller circle.
OX = 9 cm, OY = 20 cm and radius of the inner circle is 5.5 cm.
Find the radius of the outer circle.



(i) 10.22 cm (ii) 14.22 cm (iii) 12.22 cm (iv) 11.22 cm (v) 13.22 cm

Assignment Key

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