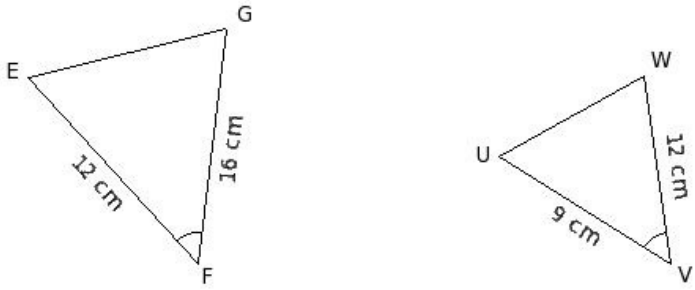
EduSahara™ Assignment

Name : Similarity of Triangles

Chapter : Similar Triangles

Grade : SSC Grade X

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

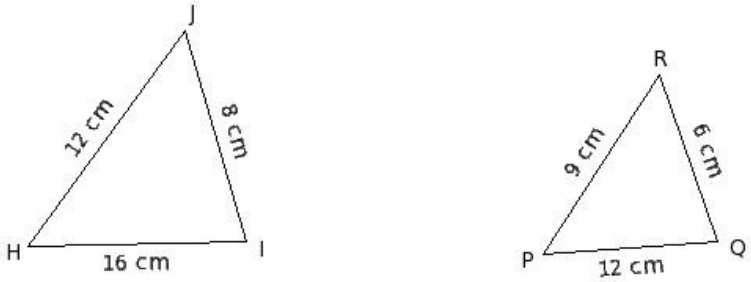


(i) not similar (ii) SAS Similarity (iii) SSS Similarity (iv) AAA Similarity

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

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

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

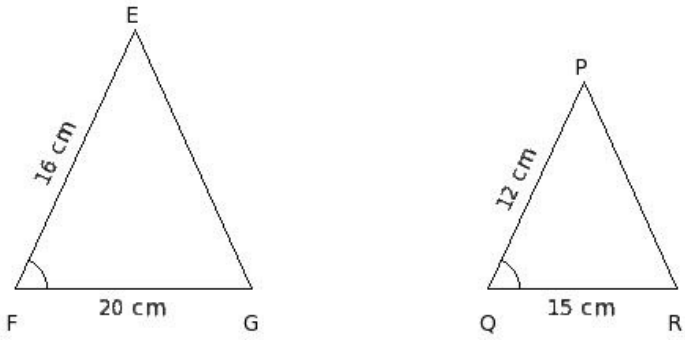


(i) AAA Similarity (ii) not similar (iii) SAS Similarity (iv) SSS Similarity

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

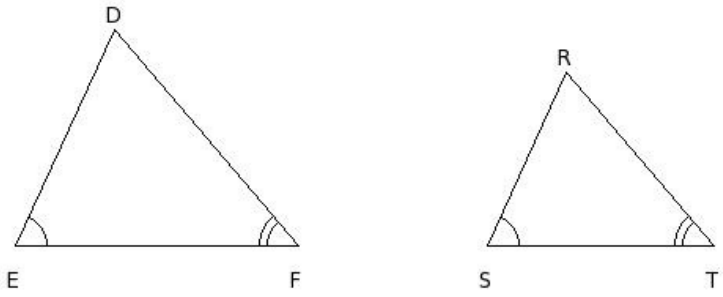
4. $\angle F = \angle Q$ and $\frac{EF}{PQ} = \frac{FG}{QR}$.

Identify the property by which the two triangles are similar



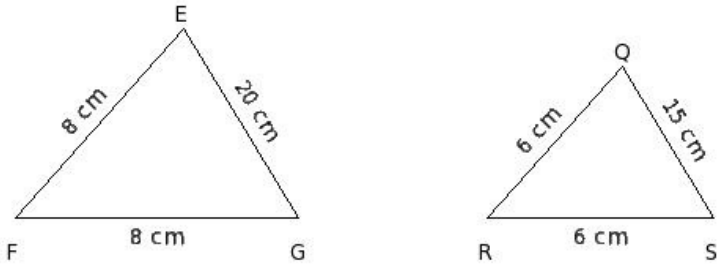
(i) AAA Similarity (ii) SSS Similarity (iii) not similar (iv) SAS Similarity

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



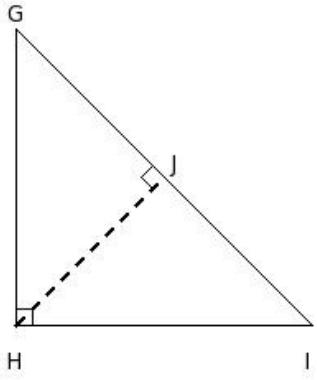
(i) SSS Similarity (ii) SAS Similarity (iii) AAA Similarity (iv) not similar

6. In the given figure, △EFG and △QRS are such that $\frac{EF}{QR} = \frac{FG}{RS} = \frac{GE}{SQ}$.
Identify the property by which the two triangles are similar



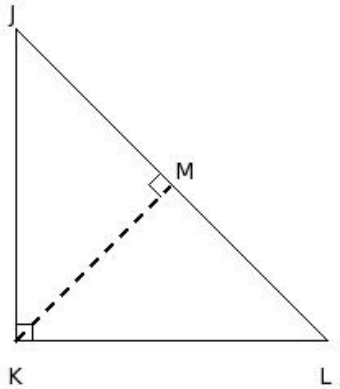
(i) SSS Similarity (ii) not similar (iii) AAA Similarity (iv) SAS Similarity

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



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

8. In the given figure, △JKL is isosceles right-angled at K and KM ⊥ LJ. ∠LMK =

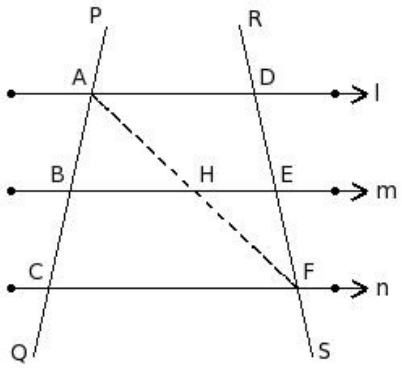


(i) ∠KMJ (ii) ∠MKL (iii) ∠MJK (iv) ∠JKM (v) ∠KLM

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 ~

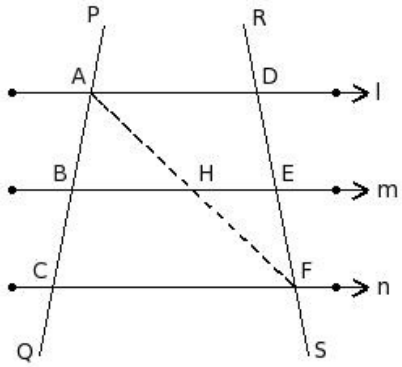


(i) △ABH (ii) △DAE (iii) △FEH (iv) △ACF (v) △DCF

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 =

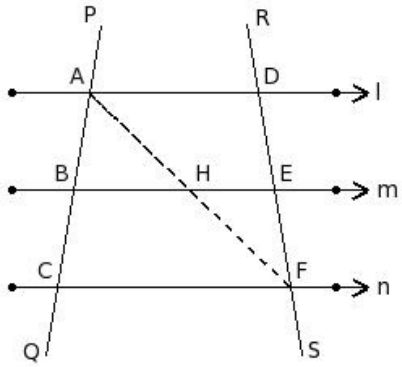


(i) ∠HFE (ii) ∠FDA (iii) ∠HAB (iv) ∠FAC (v) ∠FEH

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.

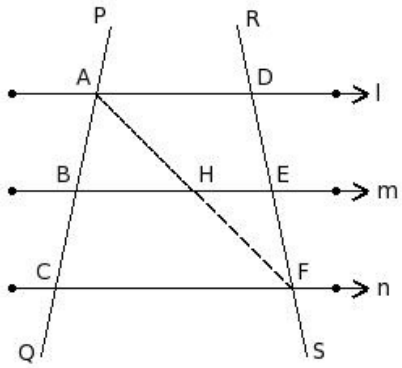
∠FDA =



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

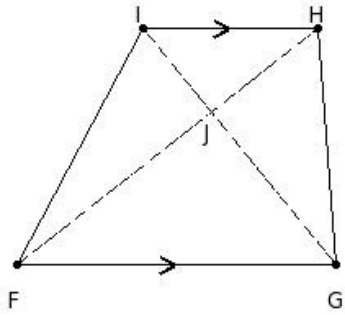
In the given figure, three lines l , m and n are such that l ∥ m ∥ n.

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



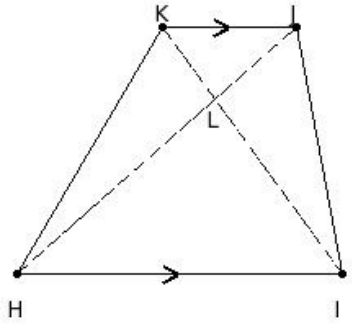
(i) ∠EHF (ii) ∠DAF (iii) ∠BHA (iv) ∠HFE (v) ∠AFD

13. In the given figure, FGHI is a trapezium in which
FG ∥ HI and the diagonals GI and FH intersect at J.
If $JF = (x+78)$ cm, $GJ = (x+70)$ cm, $JH = (x+18)$ cm and
$IJ = (x+13)$ cm, find the value of x



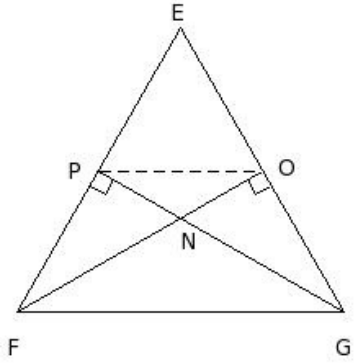
(i) (82,81) (ii) (84,84) (iii) (82,82) (iv) (84,82) (v) (83,83)

14. In the given figure, HIJK is a trapezium in which
HI ∥ JK and the diagonals IK and HJ intersect at L. △LHI ~



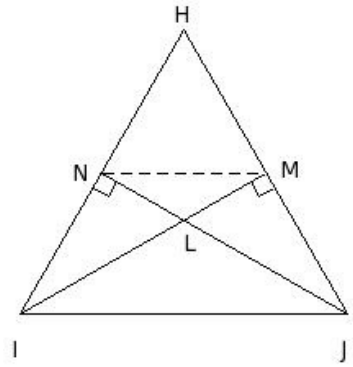
(i) △LKH (ii) △KHI (iii) △LJK (iv) △LIJ (v) △IJK

15. In the given figure, the altitudes OF and GP of △EFG meet at N. △OGN ~



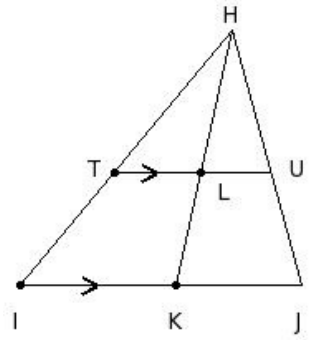
(i) △NPO (ii) △PFN (iii) △PFG (iv) △OGF (v) △NFG

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



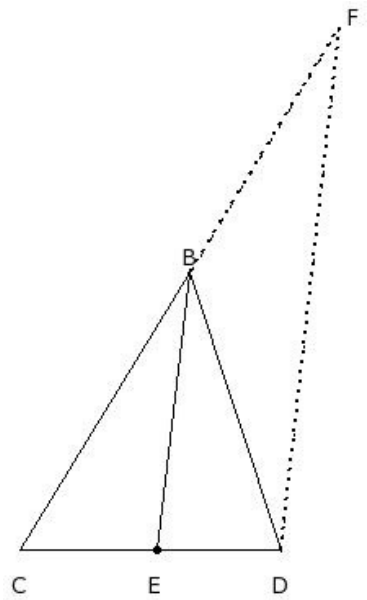
(i) ∠ILN (ii) ∠LNI (iii) ∠NIL (iv) ∠MLJ (v) ∠JML

17. In the given figure, TU ∥ IJ , and median HK bisects TU. △HKJ ~



(i) △HLU (ii) △HIJ (iii) △HTL (iv) △HIK (v) △IJH

18. In the given figure, △BCD is a triangle in which BE is the internal bisector of ∠B and DF ∥ EB meeting CB produced at F . ∠DFB =



(i) ∠BDF (ii) ∠FBD (iii) ∠BED (iv) ∠CEB (v) ∠EDB

19. Which of the following are true?

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

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

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) If two figures are similar, then they are congruent too.
e) Similar and congruent are not synonymous.

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

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

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

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

22. Which of the following are true?

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

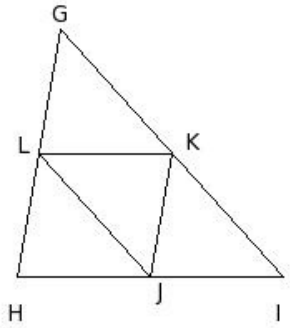
(i) {c,a,b} (ii) {c,b} (iii) {c,d} (iv) {c,a} (v) {a,b,d}

23. Which of the following are true?

a) Any two triangles are similar if the corresponding sides are proportional.
b) Any two triangles are similar if the corresponding angles are equal.
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) {c,a,b} (iii) {c,d} (iv) {c,b} (v) {a,b,d}

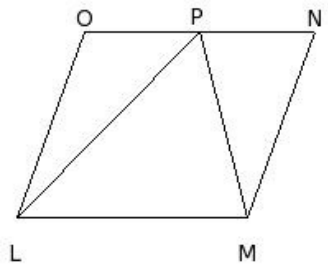
24. In the given figure, the area of the $\triangle GHI$ is x sq.cm. J,K,L are the mid-points of the sides HI , IG and GH respectively. The area of the $\triangle JKL$ is



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

(v) $\frac{3}{4}$ of area of $\triangle GHI$

25. 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



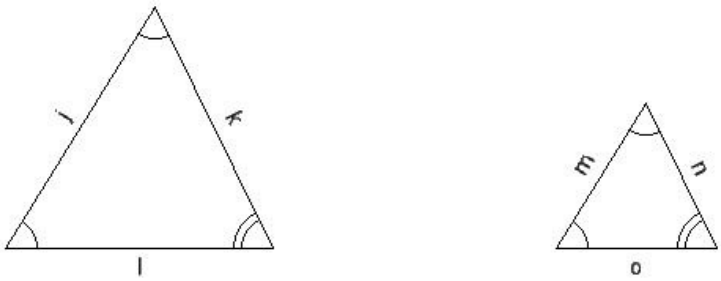
(i) $\frac{3}{2}$ the area of the triangle (ii) twice the area of the triangle (iii) $\frac{4}{3}$ the area of the triangle

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

26. If the ratio of the bases of two triangles is M : N and the ratio of the corresponding heights is O : P , the ratio of their areas in the same order is

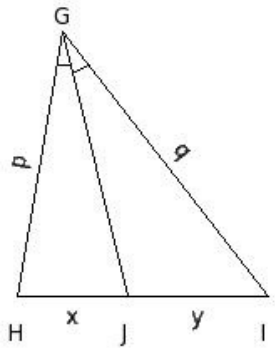
(i) NO : MP (ii) MO : NP (iii) OP : MN (iv) MP : NO (v) MN : OP

27. In the given two similar triangles, if j = 18 cm, k = 17 cm, l = 17 cm, o = 10.2 cm, find m



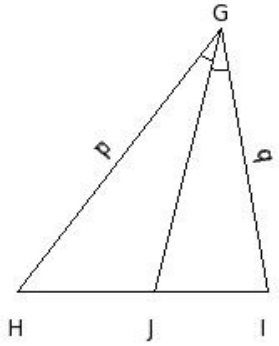
(i) 11.80 cm (ii) 12.80 cm (iii) 8.80 cm (iv) 10.80 cm (v) 9.80 cm

28. In the given figure, given ∠JGH = ∠IGJ, x : y = 6.67 cm : 8.33 cm and p = 16 cm, find q =



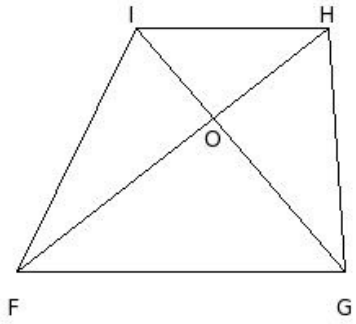
(i) 22.00 cm (ii) 19.00 cm (iii) 21.00 cm (iv) 20.00 cm (v) 18.00 cm

29. In the given figure, given ∠JGH = ∠IGJ, p = 8.33 cm, q = 6.67 cm and HI = 15 cm, find HJ =



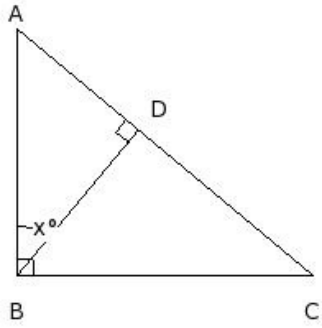
(i) 6.33 cm (ii) 10.33 cm (iii) 9.33 cm (iv) 7.33 cm (v) 8.33 cm

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



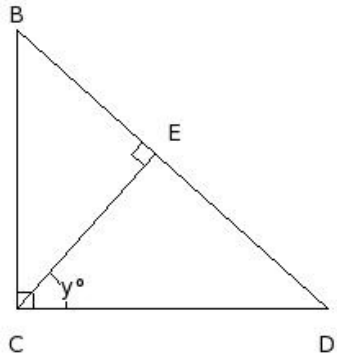
(i) 6 cm (ii) 4 cm (iii) 5 cm (iv) 3 cm (v) 7 cm

31. In the given figure, ∠DAB = 50.5°, find the value of x =



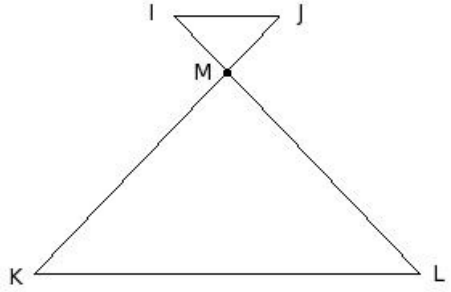
(i) 41.50° (ii) 38.50° (iii) 37.50° (iv) 40.50° (v) 39.50°

32. In the given figure, ∠CDE = 42.14°, find the value of y =



(i) 46.86° (ii) 48.86° (iii) 47.86° (iv) 45.86° (v) 49.86°

33. In the given figure, if IJ ∥ KL then



(i) △MIJ ~ △MKL (ii) △MJI ~ △MLK (iii) △IJM ~ △MKL (iv) △IJM ~ △LKM (v) △IJM ~ △MLK

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

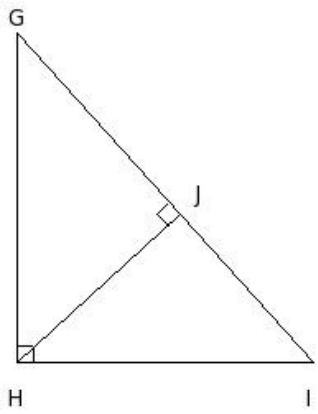
a) $HJ^2 = GJ.JI$

b) $HI^2 = IG.IJ$

c) $GH^2 = IG.IJ$

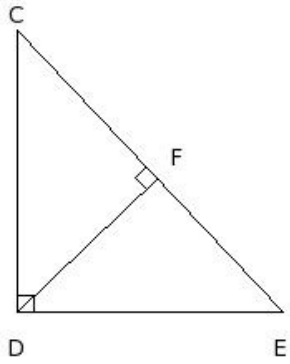
d) $GH^2 = GI.GJ$

e) $HI^2 = GI.GJ$



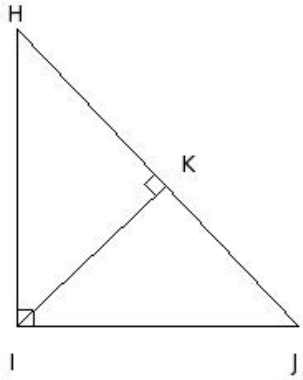
(i) {a,b,d} (ii) {c,e,d} (iii) {e,b} (iv) {c,a,b} (v) {c,a}

35. In the given figure, △CDE is right-angled at D. Also, DF ⊥ CE. If DE = 16 cm, DF = 11.65 cm, then find CD.



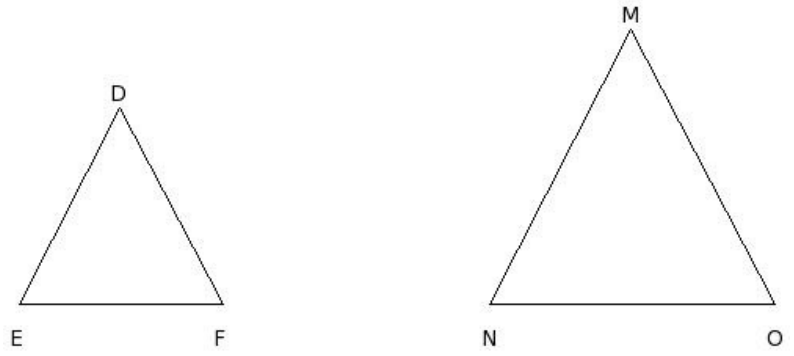
(i) 19.00 cm (ii) 18.00 cm (iii) 17.00 cm (iv) 15.00 cm (v) 16.00 cm

36. In the given figure, △HIJ is right-angled at I. Also, IK ⊥ HJ. If HK = 13.1 cm, IK = 12.38 cm, then find KJ.



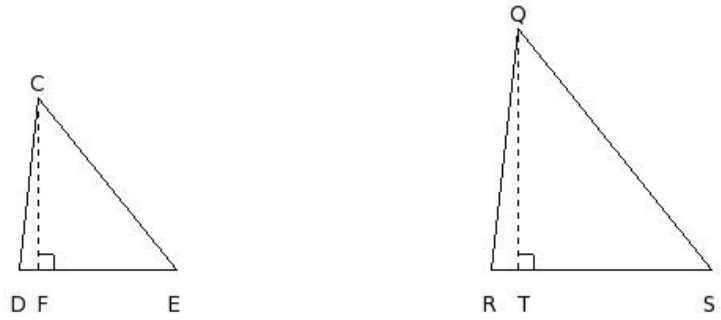
(i) 13.70 cm (ii) 10.70 cm (iii) 9.70 cm (iv) 11.70 cm (v) 12.70 cm

37. In the given figure, △DEF ~ △MNO and DE = 14 cm, MN = 19.6 cm.
If the area of the △DEF = 80.6 sq.cm, find the area of the △MNO



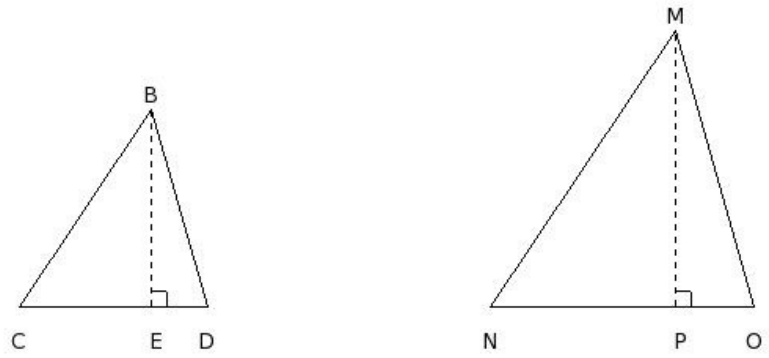
(i) 159.97 sq.cm (ii) 157.97 sq.cm (iii) 155.97 sq.cm (iv) 158.97 sq.cm (v) 156.97 sq.cm

38. In the given figure, △CDE ~ △QRS and DE = 10 cm , RS = 14 cm and
QT = 15.3 cm, find the area of the △CDE



(i) 54.64 sq.cm (ii) 52.64 sq.cm (iii) 55.64 sq.cm (iv) 56.64 sq.cm (v) 53.64 sq.cm

39. In the given figure, △BCD & △MNO are similar triangles. If the ratio of the heights BE : MP = 12 : 17, then the ratio of their areas is

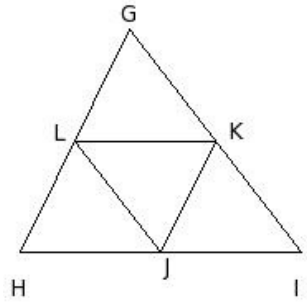


(i) 144 sq.cm : 292 sq.cm (ii) 144 sq.cm : 289 sq.cm (iii) 143 sq.cm : 289 sq.cm (iv) 144 sq.cm : 287 sq.cm

(v) 145 sq.cm : 289 sq.cm

40. 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?

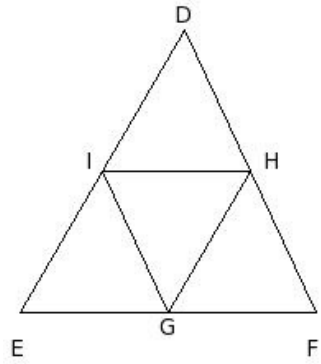
a) Area of △GHI = 4 times area of △JKL
b) All four small triangles have equal areas
c) Area of $\triangle GHI = \frac{1}{3}$ area of △JKL
d) Area of trapezium HIKL is thrice the area of △GLK
e) Area of trapezium HIKL is $\frac{1}{4}$ the area of △GHI



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

41. In the given figure, points G , H and I are the mid-points of sides EF, FD and DE of △DEF. Which of the following are true?

a) △IEG ~ △DEF
b) △GIH ~ △DEF
c) △GHI ~ △DEF
d) △HGF ~ △DEF
e) △DIH ~ △DEF

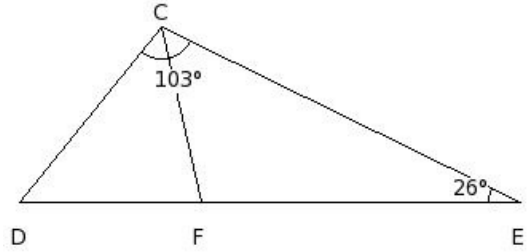


(i) {b,e,a} (ii) {b,a} (iii) {a,c,d,e} (iv) {b,c} (v) {b,d}

42. The perimeters of two similar triangles are 33 cm and 16 cm respectively. If one side of the first triangle is 11 cm, find the length of the corresponding side of the second triangle.

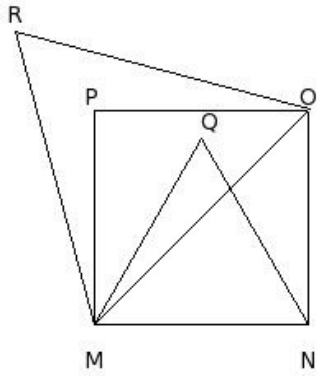
(i) 6.33 cm (ii) 3.33 cm (iii) 7.33 cm (iv) 5.33 cm (v) 4.33 cm

43. In the given figure, F is a point on side DE of △CDE such that ∠ECD = ∠CFE = 103° , ∠FEC = 26°. Find ∠ECF



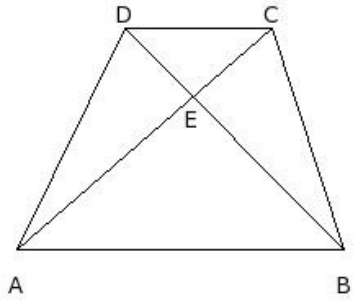
(i) 53° (ii) 50° (iii) 51° (iv) 52° (v) 49°

44. MNOP is a square and △MNQ is an equilateral triangle. Also, △MOR is an equilateral triangle. If area of △MNQ is 'a' sq.units, then the area of △MOR is



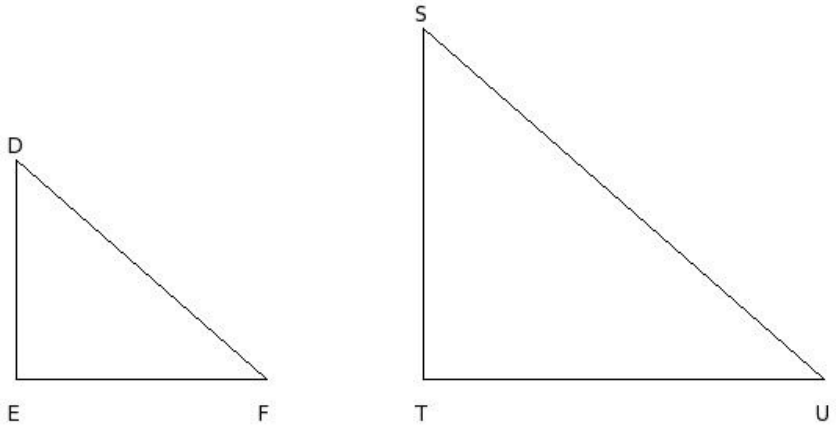
(i) a^2 sq.units (ii) 2a sq.units (iii) $\frac{1}{2}$ a sq.units (iv) $\frac{1}{2}\sqrt{3}$ a sq.units (v) $\sqrt{3}$ a sq.units

45. ABCD is a cyclic trapezium. Diagonals BD and AC intersect at E. If DA = 15 cm, find BC



(i) 17 cm (ii) 13 cm (iii) 16 cm (iv) 14 cm (v) 15 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) 113 m (ii) 110 m (iii) 114 m (iv) 112 m (v) 111 m

47. In the given figure, △EGF is right-angled at G, GH ⊥ EF.
$EF = c, GF = a, EG = b$ and $GH = p$. Which of the following are true?

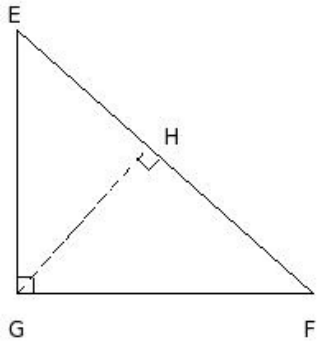
a) $ab = pc$

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

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

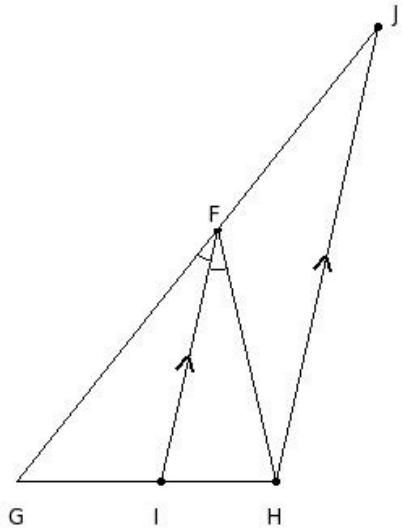
d) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{c^2} + \frac{1}{p^2}$

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



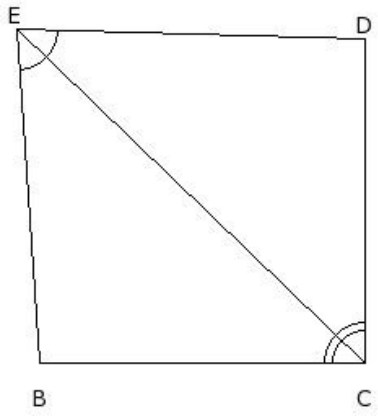
(i) {d,e,c} (ii) {a,b,c} (iii) {d,a} (iv) {d,a,b} (v) {e,b}

48. In the given figure, ∠IFG = ∠HFI and FI ∥ JH and FG = 20 cm, GI = 9 cm and IH = 7 cm. Find FJ



(i) 15.56 cm (ii) 14.56 cm (iii) 17.56 cm (iv) 16.56 cm (v) 13.56 cm

49. In the given figure, CE is the angular bisector of $\angle C \& \angle E$
$BC = 20$ cm, $CD = 20$ cm and $DE = 21$ cm. Find EB

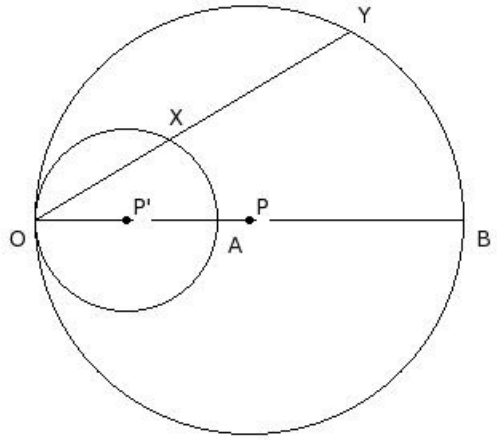


(i) 19.00 cm (ii) 23.00 cm (iii) 20.00 cm (iv) 21.00 cm (v) 22.00 cm

50. The ratio of the bases of two triangles ABC and DEF is 3:5 .
If the triangles are equal in area, then the ratio of their heights is

(i) 5:3 (ii) 3:7 (iii) 3:2 (iv) 4:5 (v) 2:5

51. In the given figure, the two circles touch each other internally.
Diameter OB passes through the centre of the smaller circle.
$OX = 10$ cm, $OY = 23$ cm and radius of the inner circle is 5.7 cm.
Find the radius of the outer circle.



(i) 15.11 cm (ii) 12.11 cm (iii) 14.11 cm (iv) 11.11 cm (v) 13.11 cm

Assignment Key

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