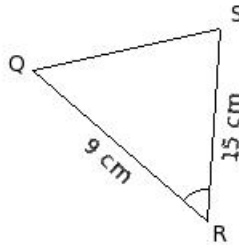
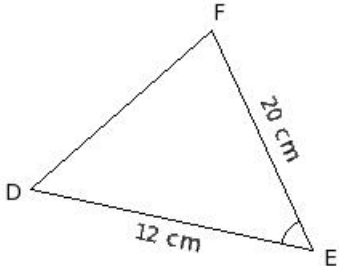


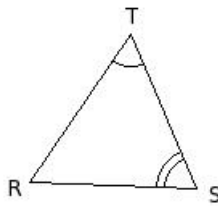
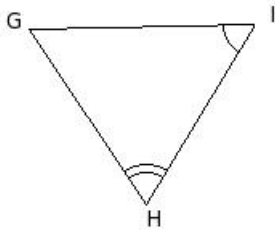
EduSahara™ Learning Center Assignment**Grade : Class X, ICSE****Chapter : Similarity of Triangles****Name : Similarity of Triangles**

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



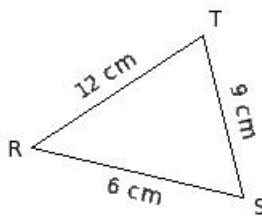
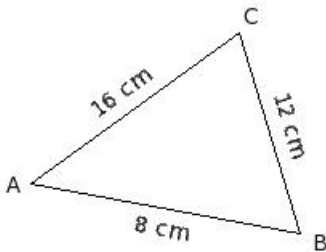
- (i) SSS Similarity
- (ii) not similar
- (iii) SAS Similarity
- (iv) AAA Similarity

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



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

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



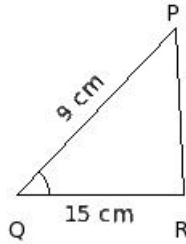
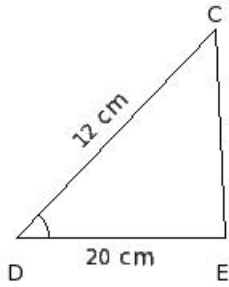
- (i) SSS Similarity
- (ii) not similar
- (iii) SAS Similarity
- (iv) AAA Similarity

4. In the given figure, $\triangle CDE$ and $\triangle PQR$ are such that

$$\angle D = \angle Q \text{ and } \underline{CD} = \underline{DE} .$$

PQ QR

Identify the property by which the two triangles are similar

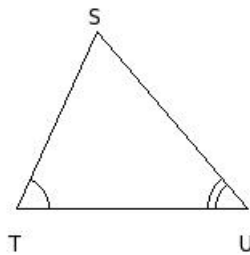
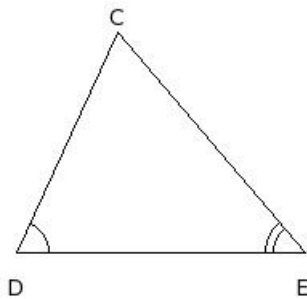


- (i) SAS Similarity
- (ii) AAA Similarity
- (iii) SSS Similarity
- (iv) not similar

In the given figure, $\triangle CDE$ and $\triangle STU$ are such that

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

Identify the property by which the two triangles are similar

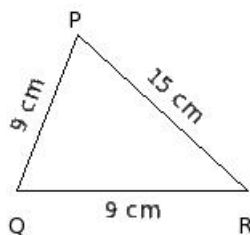
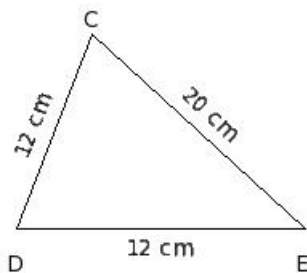


- (i) SSS Similarity
- (ii) SAS Similarity
- (iii) AAA Similarity
- (iv) not similar

In the given figure, $\triangle CDE$ and $\triangle PQR$ are such that

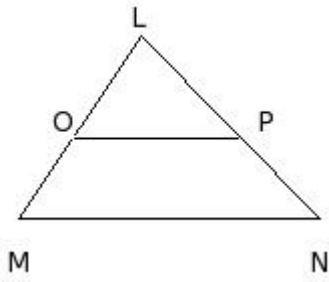
6. $\frac{CD}{PQ} = \frac{DE}{QR} = \frac{EC}{RP}$.

Identify the property by which the two triangles are similar



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

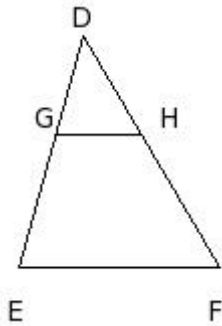
7. In the given figure, $OP \parallel MN$. If $\frac{LO}{OM} = \frac{5}{4}$ and $LN = 13.5$ cm, find LP



- (i) 6.50 cm (ii) 7.50 cm (iii) 8.50 cm (iv) 5.50 cm (v) 9.50 cm

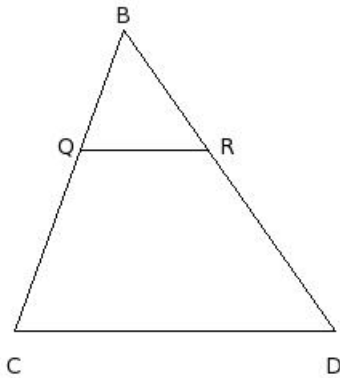
In the given figure, $GH \parallel EF$.

8. If $DG = 5.19$ cm, $DE = 12.1$ cm and $DF = 13.9$ cm, find DH



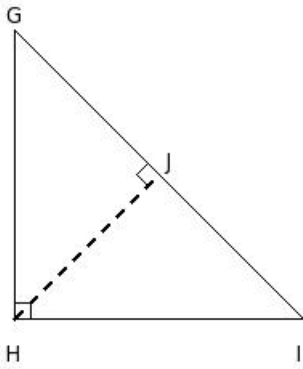
- (i) 5.96 cm (ii) 6.96 cm (iii) 3.96 cm (iv) 4.96 cm (v) 7.96 cm

9. In the given figure, $QR \parallel CD$ and $BC = 20$ cm, $QR = 12$ cm and $CD = 20$ cm, find BQ



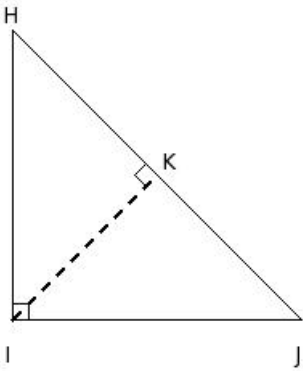
- (i) 10.0 cm (ii) 14.0 cm (iii) 11.0 cm (iv) 12.0 cm (v) 13.0 cm

10. In the given figure, $\triangle GHI$ is isosceles right-angled at H and $HJ \perp IG$. $\angle G =$



- (i) $\angle H$ (ii) $\angle K$ (iii) $\angle I$ (iv) $\angle J$ (v) $\angle L$

11. In the given figure, $\triangle HIJ$ is isosceles right-angled at I and $IK \perp JH$. $\angle JKI =$

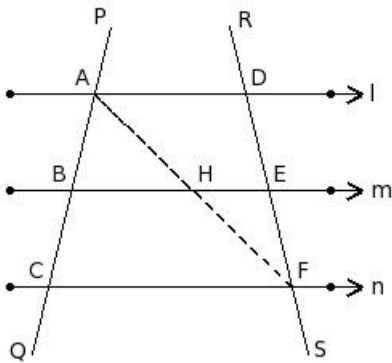


- (i) $\angle KIJ$ (ii) $\angle KHI$ (iii) $\angle IKH$ (iv) $\angle HIK$ (v) $\angle IJK$

In the given figure, three lines l , m and n are such that $l \parallel m \parallel n$.

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

$\triangle ABH \sim$

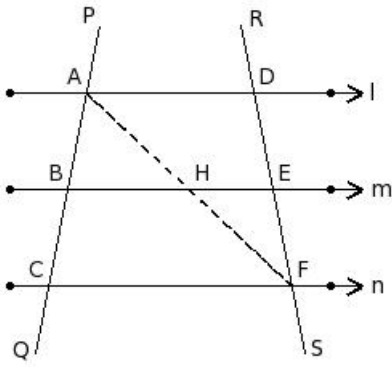


- (i) $\triangle DAE$ (ii) $\triangle FEH$ (iii) $\triangle ACF$ (iv) $\triangle DCF$ (v) $\triangle FDA$

In the given figure, three lines l , m and n are such that $l \parallel m \parallel n$.

13. Two transversals PQ and RS intersect them at the points A, B, C and D, E, F respectively.

$\angle FAC =$

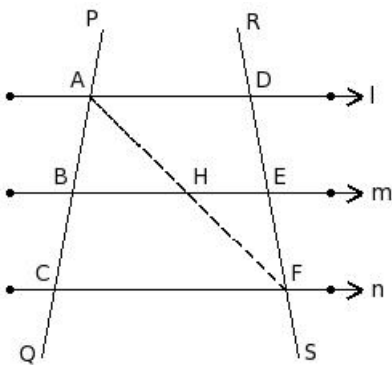


- (i) $\angle HFE$ (ii) $\angle FEH$ (iii) $\angle HAB$ (iv) $\angle FDA$ (v) $\angle AFD$

In the given figure, three lines l , m and n are such that $l \parallel m \parallel n$.

14. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.

$\angle ABH =$

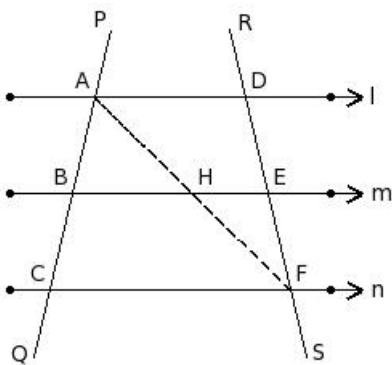


- (i) $\angle FEH$ (ii) $\angle DAF$ (iii) $\angle FDA$ (iv) $\angle ACF$ (v) $\angle EHF$

In the given figure, three lines l , m and n are such that $l \parallel m \parallel n$.

15. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.

$\angle DAF =$



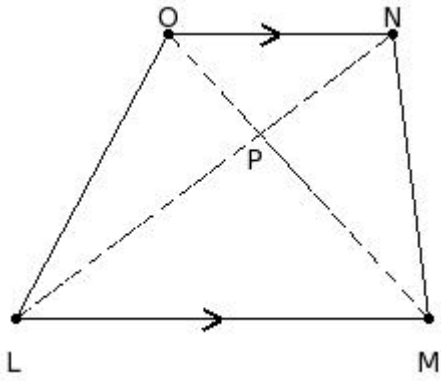
- (i) $\angle EHF$ (ii) $\angle HFE$ (iii) $\angle BHA$ (iv) $\angle AFD$ (v) $\angle CFA$

In the given figure, $LMNO$ is a trapezium in which

$LM \parallel NO$ and the diagonals MO and LN intersect at P .

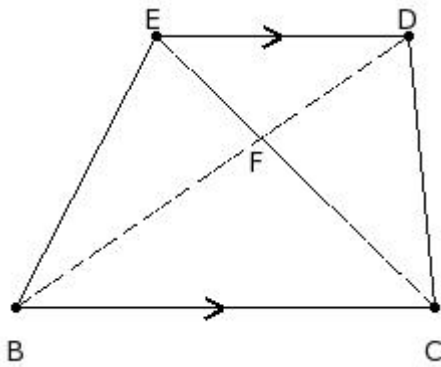
16. If $PL = (x + 43)$ cm, $MP = (2x + 8)$ cm, $PN = (x + 11)$ cm and

$OP = (x + 23)$ cm, find the value of x



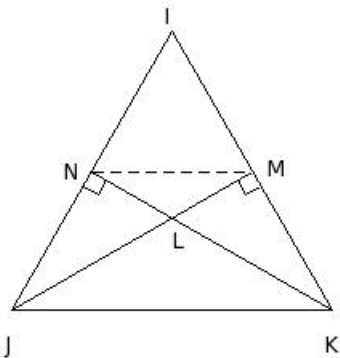
- (i) $(-17, 52)$ (ii) $(-14, 53)$ (iii) $(-16, 54)$
 (iv) $(-17, 53)$ (v) $(55, -15)$

17. In the given figure, BCDE is a trapezium in which
 $BC \parallel DE$ and the diagonals CE and BD intersect at F. $\triangle FBC \sim$



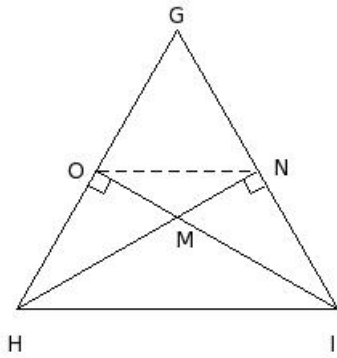
- (i) $\triangle FCD$ (ii) $\triangle CDE$ (iii) $\triangle FEB$ (iv) $\triangle EBC$ (v) $\triangle FDE$

18. In the given figure, the altitudes MJ and KN of $\triangle IJK$ meet at L. $\triangle LJK \sim$



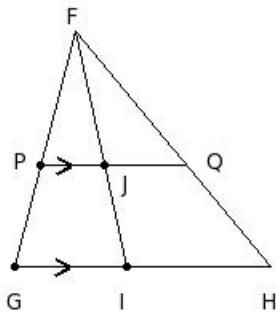
- (i) $\triangle NJK$ (ii) $\triangle LNM$ (iii) $\triangle NJL$ (iv) $\triangle MKJ$ (v) $\triangle MKL$

19. In the given figure, the altitudes NH and IO of $\triangle GHI$ meet at M. $\angle NMI =$



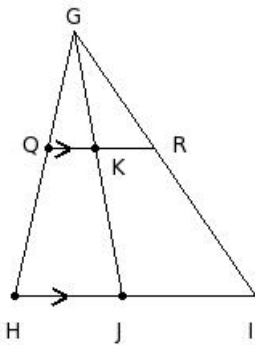
- (i) $\angle INM$ (ii) $\angle OHM$ (iii) $\angle MOH$ (iv) $\angle HMO$ (v) $\angle MIN$

20. In the given figure, $PQ \parallel GH$, and median FI bisects PQ .
If $FI = 15.1$ cm, $FP = 8.57$ cm and $FJ = 8.63$ cm, $FG =$



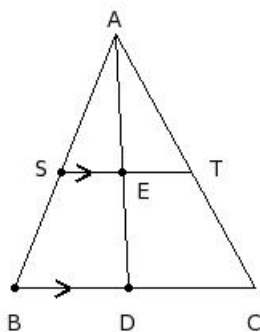
- (i) 14.00 cm (ii) 17.00 cm (iii) 16.00 cm (iv) 13.00 cm (v) 15.00 cm

21. In the given figure, $QR \parallel HI$, and median GJ bisects QR .
If $GJ = 16.8$ cm, $GI = 20$ cm and $GK = 7.47$ cm, $GR =$



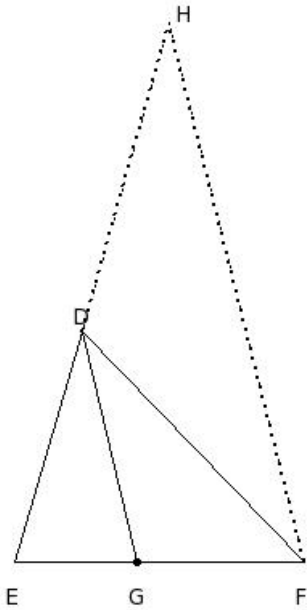
- (i) 6.89 cm (ii) 10.89 cm (iii) 7.89 cm (iv) 9.89 cm (v) 8.89 cm

22. In the given figure, $ST \parallel BC$, and median AD bisects ST . $\triangle ABD \sim$



- (i) $\triangle ASE$ (ii) $\triangle ADC$ (iii) $\triangle AET$ (iv) $\triangle ABC$ (v) $\triangle BCA$

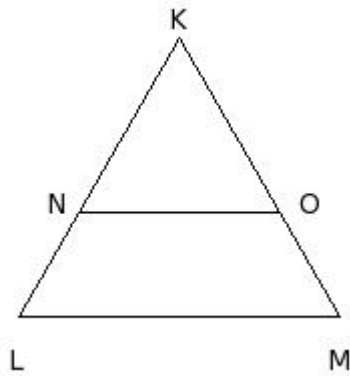
23. In the given figure, $\triangle DEF$ is a triangle in which DG is the internal bisector of $\angle D$ and $FH \parallel DG$ meeting ED produced at H . $\angle FHD =$



- (i) $\angle GFD$ (ii) $\angle DGF$ (iii) $\angle HDF$ (iv) $\angle EGD$ (v) $\angle DFH$

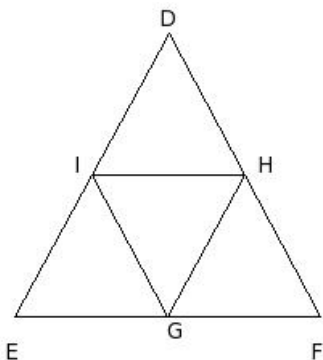
24. In the given figure, N and O are points on the sides KL and KM respectively of $\triangle KLM$. For which of the following cases, $NO \parallel LM$

- a) $KL = 16$ cm, $NL = 6$ cm, $KM = 16$ cm and $KO = 10$ cm
 b) $KN = 10$ cm, $NL = 6$ cm, $KO = 10$ cm and $OM = 6$ cm
 c) $KL = 16$ cm, $NL = 6$ cm, $KO = 12$ cm and $KM = 16$ cm
 d) $KL = 16$ cm, $KN = 12$ cm, $KM = 16$ cm and $OM = 6$ cm



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

25. In the given figure, the area of the $\triangle DEF$ is x sq.cm. G, H, I are the mid-points of the sides EF , FD and DE respectively. The area of the $\triangle GHI$ is

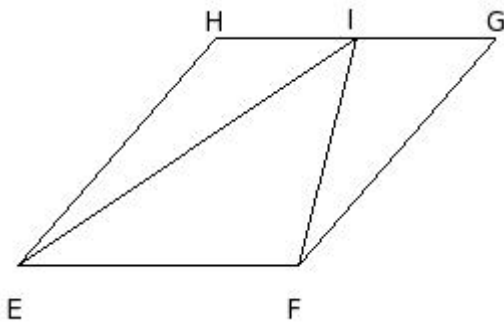


- (i) $\frac{1}{7}$ of area of $\triangle DEF$

- (ii) $\frac{2}{3}$ of area of $\triangle DEF$
 (iii) $\frac{3}{4}$ of area of $\triangle DEF$
 (iv) $\frac{1}{4}$ of area of $\triangle DEF$
 (v) $\frac{1}{3}$ of area of $\triangle DEF$

26. In the given figure, the parallelogram EFGH and the triangle $\triangle IEF$ are on the same bases and between the same parallels.

The area of the $\triangle IEF$ is x sq.cm. The area of the parallelogram is

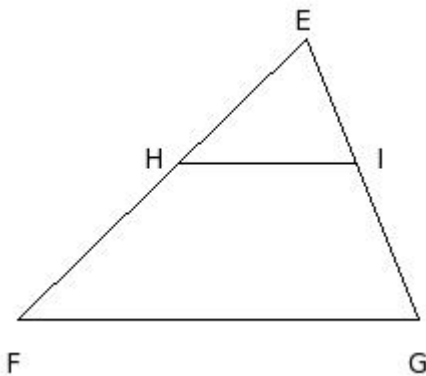


- (i) $\frac{4}{3}$ the area of the triangle
 (ii) thrice the area of the triangle
 (iii) $\frac{5}{4}$ the area of the triangle
 (iv) twice the area of the triangle
 (v) $\frac{3}{2}$ the area of the triangle

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

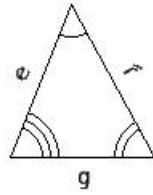
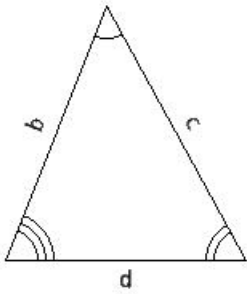
- (i) $GH : IJ$ (ii) $GI : HJ$ (iii) $GJ : HI$ (iv) $HI : GJ$ (v) $IJ : GH$

28. In the given $\triangle EFG$, $HI \parallel FG$. If $EH : HF = 8.89 \text{ cm} : 11.11 \text{ cm}$ and $EG = 15 \text{ cm}$, $IG =$



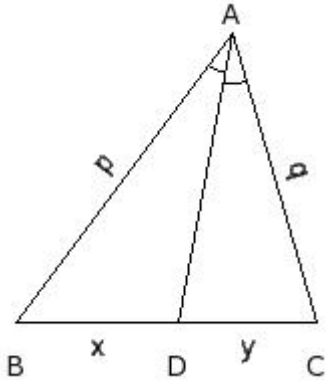
- (i) 9.33 cm (ii) 6.33 cm (iii) 10.33 cm (iv) 7.33 cm (v) 8.33 cm

29. In the given two similar triangles, if $b = 17 \text{ cm}$, $c = 18 \text{ cm}$, $d = 15 \text{ cm}$, $g = 9 \text{ cm}$, find e



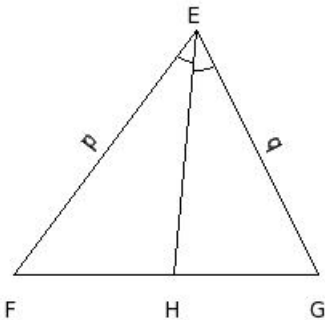
- (i) 9.20 cm (ii) 12.20 cm (iii) 11.20 cm (iv) 8.20 cm (v) 10.20 cm

30. In the given figure, given $\angle DAB = \angle CAD$, $x : y = 8.18 \text{ cm} : 6.82 \text{ cm}$ and $q = 15 \text{ cm}$, find $p =$



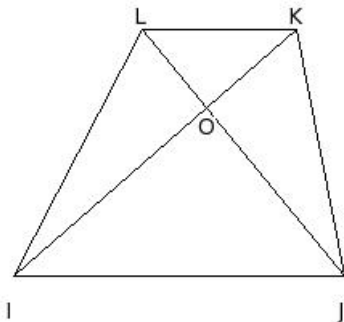
- (i) 18.00 cm (ii) 19.00 cm (iii) 17.00 cm (iv) 20.00 cm (v) 16.00 cm

31. In the given figure, given $\angle HEF = \angle GEH$, $p = 10.03 \text{ cm}$, $q = 8.97 \text{ cm}$ and $FG = 19 \text{ cm}$, find $FH =$



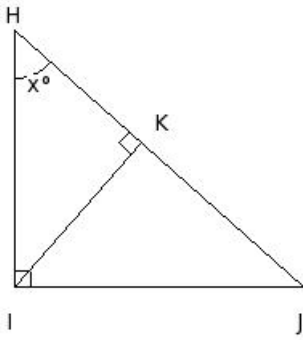
- (i) 8.03 cm (ii) 11.03 cm (iii) 9.03 cm (iv) 12.03 cm (v) 10.03 cm

32. In the given figure, IJKL is a trapezium where $OI = 15 \text{ cm}$, $OJ = 15 \text{ cm}$ and $OK = 5 \text{ cm}$. Find $OL =$



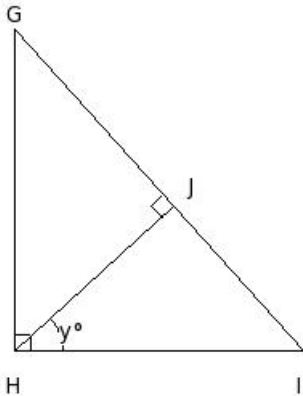
- (i) 6 cm (ii) 5 cm (iii) 4 cm (iv) 7 cm (v) 3 cm

33. In the given figure, $\angle HIK = 41.28^\circ$, find the value of $x =$



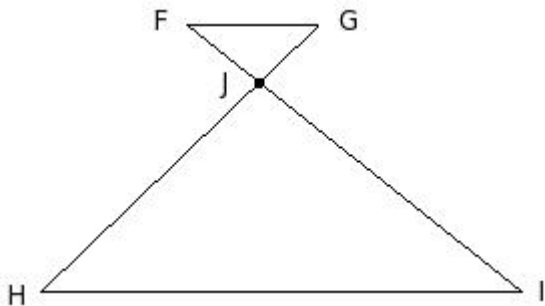
- (i) 49.72° (ii) 50.72° (iii) 48.72° (iv) 47.72° (v) 46.72°

34. In the given figure, $\angle HIJ = 48.01^\circ$, find the value of $y =$



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

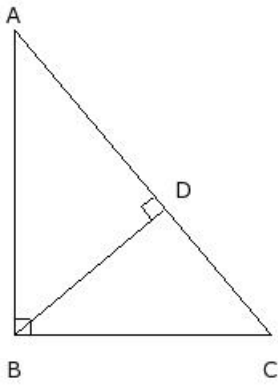
35. In the given figure, if $FG \parallel HI$ then



- (i) $\triangle JGF \sim \triangle JIH$
 (ii) $\triangle FGJ \sim \triangle JIH$
 (iii) $\triangle FGJ \sim \triangle JHI$
 (iv) $\triangle FGJ \sim \triangle IJH$
 (v) $\triangle JFG \sim \triangle JHI$

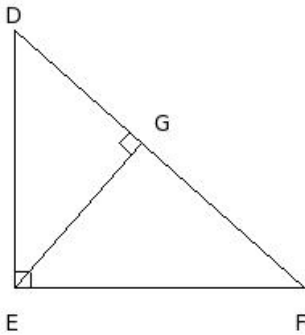
36. In the given figure, $\triangle ABC$ is right-angled at B. Also, $BD \perp AC$. Which of the following are true?

- a) $BC^2 = AC \cdot AD$
 b) $AB^2 = CA \cdot CD$
 c) $BC^2 = CA \cdot CD$
 d) $AB^2 = AC \cdot AD$
 e) $BD^2 = AD \cdot DC$



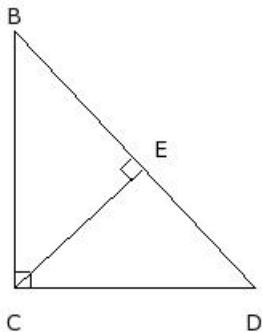
- (i) {a,b,e} (ii) {a,c} (iii) {a,c,d} (iv) {b,d} (v) {c,d,e}

37. In the given figure, $\triangle DEF$ is right-angled at E. Also, $EG \perp DF$. If $DE = 16$ cm, $EF = 18$ cm, then find EG.



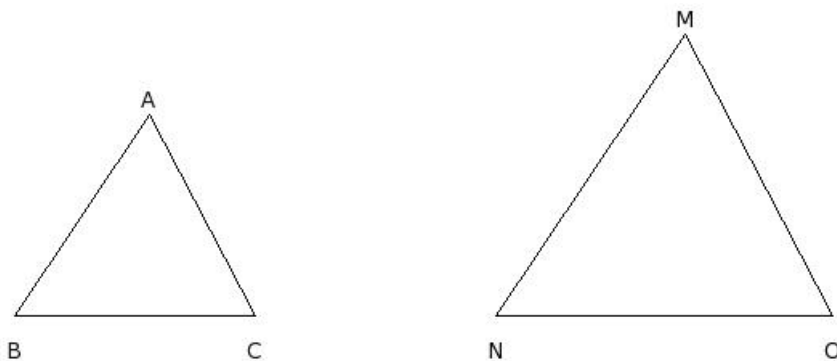
- (i) 11.96 cm (ii) 12.96 cm (iii) 9.96 cm (iv) 13.96 cm (v) 10.96 cm

38. In the given figure, $\triangle BCD$ is right-angled at C. Also, $CE \perp BD$. If $BE = 11.7$ cm, $CE = 10.92$ cm, then find ED.



- (i) 11.20 cm (ii) 8.20 cm (iii) 12.20 cm (iv) 10.20 cm (v) 9.20 cm

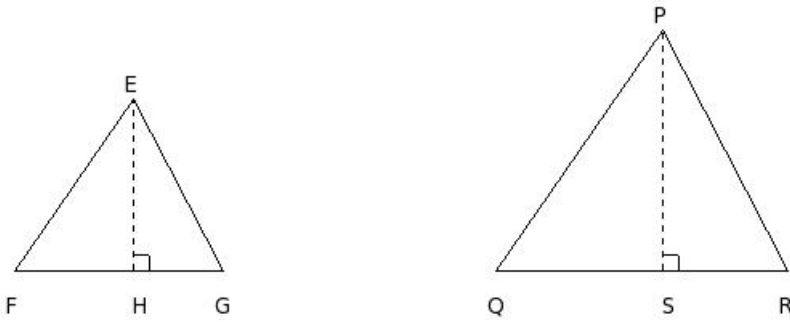
39. In the given figure, $\triangle ABC \sim \triangle MNO$ and $AB = 15$ cm, $MN = 21$ cm.
If the area of the $\triangle MNO = 182.02$ sq.cm, find the area of the $\triangle ABC$



- (i) 94.87 sq.cm (ii) 91.87 sq.cm (iii) 90.87 sq.cm

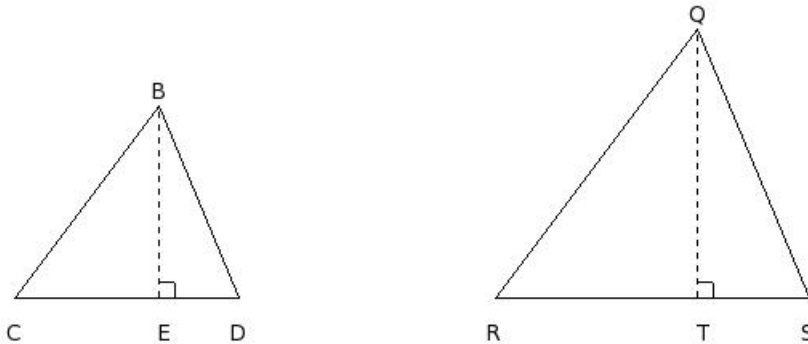
- (iv) 93.87 sq.cm (v) 92.87 sq.cm

40. In the given figure, $\triangle EFG \sim \triangle PQR$ and $FG = 13$ cm, $QR = 18.2$ cm and $PS = 14.9$ cm, find the area of the $\triangle EFG$



- (i) 71.20 sq.cm (ii) 69.20 sq.cm (iii) 70.20 sq.cm
(iv) 67.20 sq.cm (v) 68.20 sq.cm

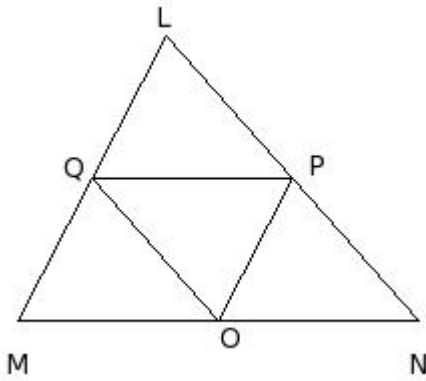
41. In the given figure, $\triangle BCD$ & $\triangle QRS$ are similar triangles. If the ratio of the heights $BE : QT = 12 : 17$, then the ratio of their areas is



- (i) 144 sq.cm : 291 sq.cm
(ii) 144 sq.cm : 287 sq.cm
(iii) 143 sq.cm : 289 sq.cm
(iv) 145 sq.cm : 289 sq.cm
(v) 144 sq.cm : 289 sq.cm

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

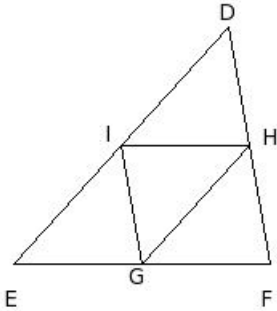
- a) Area of trapezium MNPQ is $\frac{1}{4}$ the area of $\triangle LMN$
b) All four small triangles have equal areas
c) Area of trapezium MNPQ is thrice the area of $\triangle LQP$
d) Area of $\triangle LMN = \frac{1}{3}$ area of $\triangle OPQ$
e) Area of $\triangle LMN = 4$ times area of $\triangle OPQ$



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

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

- a) $\triangle DIH \sim \triangle DEF$
 b) $\triangle IEG \sim \triangle DEF$
 c) $\triangle GIH \sim \triangle DEF$
 d) $\triangle GHI \sim \triangle DEF$
 e) $\triangle HGF \sim \triangle DEF$

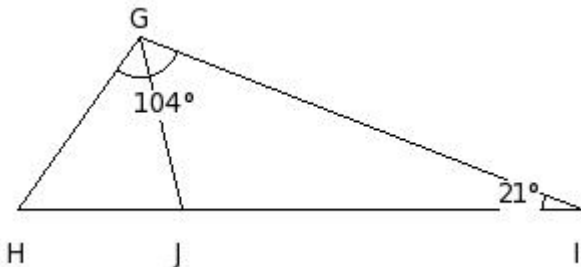


- (i) {a,b,d,e} (ii) {c,a} (iii) {c,d} (iv) {c,e,a} (v) {c,b}

44. The perimeters of two similar triangles are 35 cm and 22 cm respectively. If one side of the first triangle is 16 cm, find the length of the corresponding side of the second triangle.

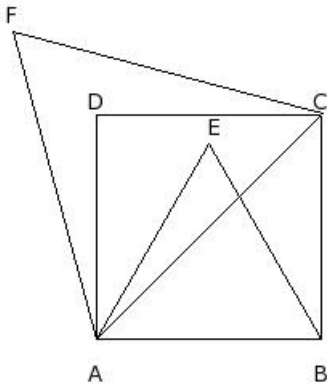
- (i) 11.06 cm (ii) 12.06 cm (iii) 10.06 cm (iv) 9.06 cm (v) 8.06 cm

45. In the given figure, J is a point on side HI of $\triangle GHI$ such that $\angle IGH = \angle GJI = 104^\circ$, $\angle JIG = 21^\circ$. Find $\angle IGJ$



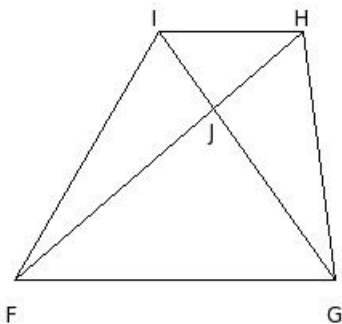
- (i) 55° (ii) 57° (iii) 54° (iv) 56° (v) 53°

46. ABCD is a square and $\triangle ABE$ is an equilateral triangle. Also, $\triangle ACF$ is an equilateral triangle. If area of $\triangle ABE$ is 'a' sq.units, then the area of $\triangle ACF$ is



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

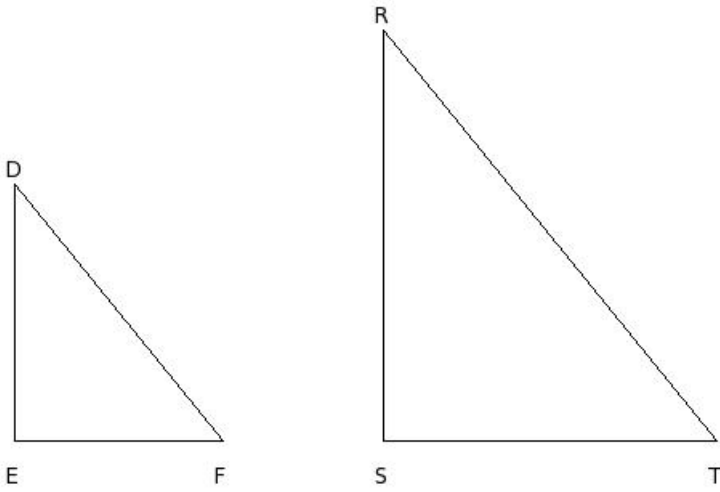
47. FGHI is a cyclic trapezium. Diagonals GI and FH intersect at J. If IF = 18 cm, find GH



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

A vertical stick 16 mt long casts a shadow of 13 mt long on the ground.

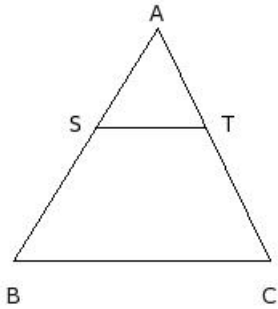
48. At the same time, a tower casts the shadow 104 mt long on the ground.
Find the height of the tower.



- (i) 130 mt (ii) 128 mt (iii) 126 mt (iv) 129 mt (v) 127 mt

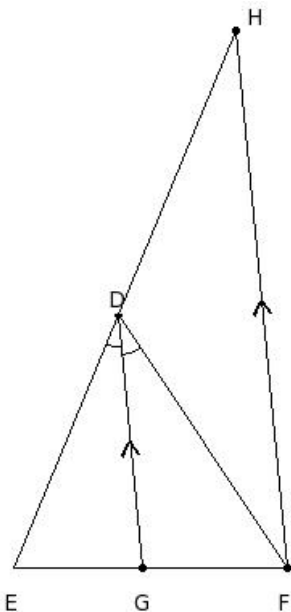
In the given figure, $\triangle ABC$, $ST \parallel BC$ such that

49. area of $\triangle AST =$ area of $STCB$. Find $\frac{AS}{AB}$



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

50. In the given figure, $\angle GDE = \angle FDG$ and $DG \parallel HF$ and $DE = 17$ cm, $EG = 8$ cm and $GF = 9$ cm. Find DH

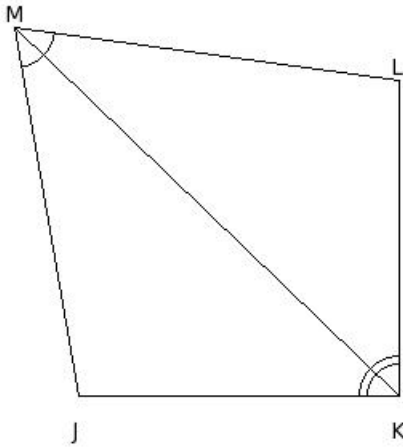


- (i) 18.12 cm (ii) 17.12 cm (iii) 19.12 cm (iv) 20.12 cm (v) 21.12 cm

51.

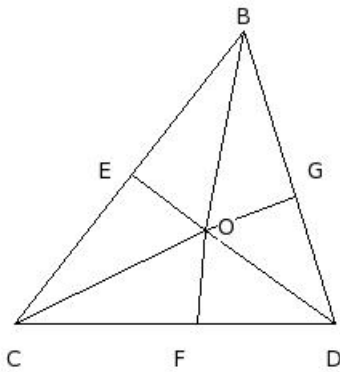
In the given figure, KM is the angular bisector of $\angle K$ & $\angle M$

JK = 20 cm , KL = 20 cm and LM = 24 cm . Find MJ



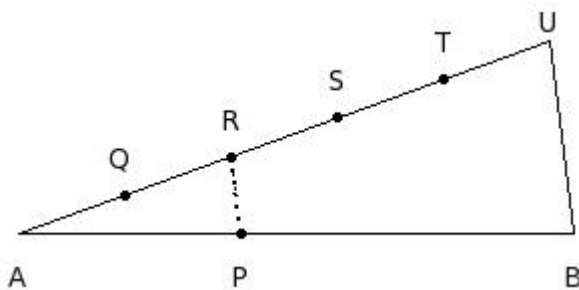
- (i) 26.00 cm (ii) 22.00 cm (iii) 24.00 cm (iv) 23.00 cm (v) 25.00 cm

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



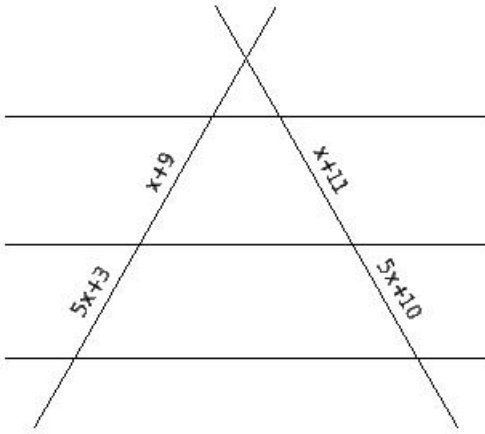
- (i) $BE \cdot CF \cdot DG = EF \cdot FG \cdot GE$
 (ii) $BE \cdot CF \cdot DG = EC \cdot FD \cdot GB$
 (iii) $BE \cdot CF \cdot DG = BC \cdot CD \cdot DB$
 (iv) $BE \cdot CF \cdot DG = OB \cdot OC \cdot OD$
 (v) $BE \cdot CF \cdot DG = OE \cdot OF \cdot OG$

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



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

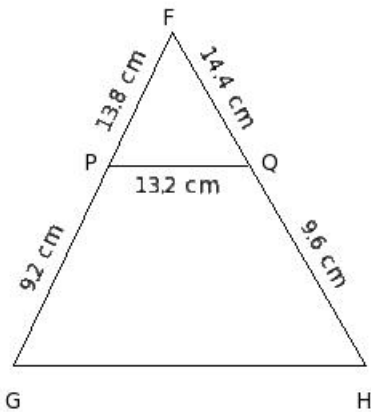
54. From the given figure and values, find x



(i) (19 , 18) (ii) (21 , 21) (iii) (19 , 19)

(iv) (22 , 19) (v) (20 , 20)

55. If the measures are as shown in the given figure, find GH



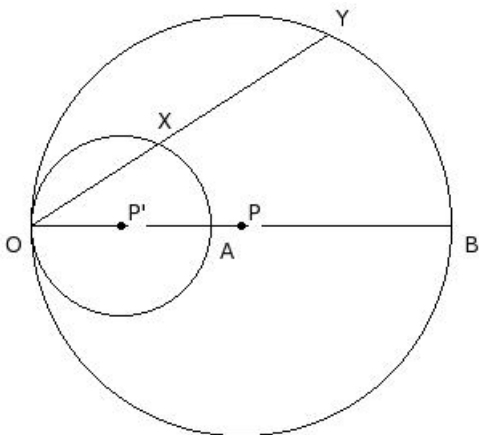
(i) 24.0 cm (ii) 20.0 cm (iii) 22.0 cm (iv) 21.0 cm (v) 23.0 cm

In the given figure, the two circles touch each other internally.

Diameter OB passes through the centre of the smaller circle.

56. $OX = 9$ cm , $OY = 22$ cm and radius of the inner circle is 5.6 cm .

Find the radius of the outer circle.



(i) 15.69 cm (ii) 12.69 cm (iii) 11.69 cm (iv) 14.69 cm (v) 13.69 cm

Assignment Key

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

55) (iii)

56) (v)