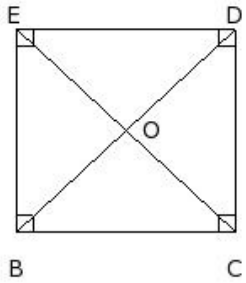
EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Triangles

Grade : CBSE Grade X

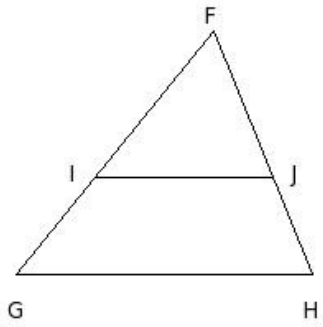
1. In the given figure, O is a point in the interior of the rectangle BCDE. Then



(i) $OB^2 + OD^2 = OC^2 + OE^2$ (ii) $OB^2 + OC^2 + OD^2 + OE^2 = BC^2 + CD^2 + DE^2 + EB^2$

(iii) $OB^2 - OD^2 = OC^2 - OE^2$ (iv) $OB^2 + OC^2 + OD^2 + OE^2 = BD^2 + CE^2$

2. In the given △FGH, IJ ∥ GH. If FI : IG = 11.4 cm : 7.6 cm and FH = 16 cm, JH =



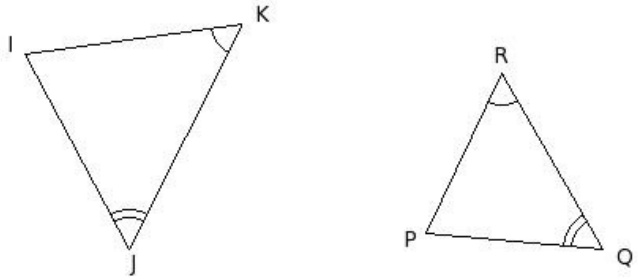
(i) 4.40 cm (ii) 8.40 cm (iii) 7.40 cm (iv) 5.40 cm (v) 6.40 cm

3. Which of the following are true?

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

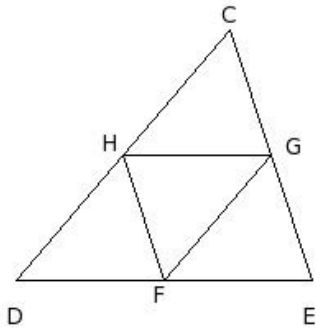
(i) {b,d} (ii) {a,c,b} (iii) {a,d,b} (iv) {c,d} (v) {a,b}

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



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

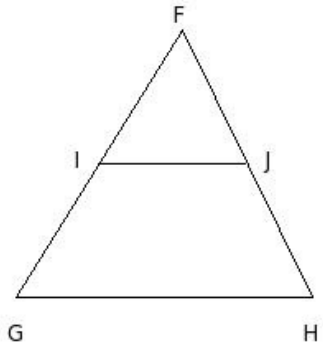
5. In the given figure, the area of the $\triangle CDE$ is x sq.cm. F,G,H are the mid-points of the sides DE , EC and CD respectively. The area of the $\triangle FGH$ is



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

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

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



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

7. The perimeters of two similar triangles are 31 cm and 22 cm respectively. If one side of the first triangle is 8 cm, find the length of the corresponding side of the second triangle.

(i) 3.68 cm (ii) 5.68 cm (iii) 7.68 cm (iv) 4.68 cm (v) 6.68 cm

8. 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?

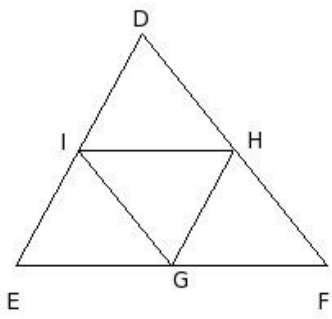
a) Area of trapezium EFHI is $\frac{1}{4}$ the area of $\triangle DEF$

b) Area of trapezium EFHI is thrice the area of $\triangle DIH$

c) All four small triangles have equal areas

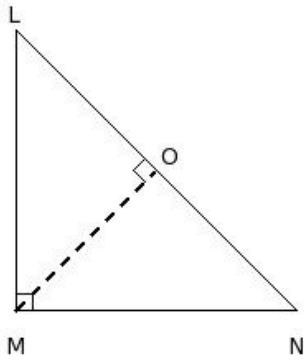
d) Area of $\triangle DEF$ = 4 times area of $\triangle GHI$

e) Area of $\triangle DEF = \frac{1}{3}$ area of $\triangle GHI$



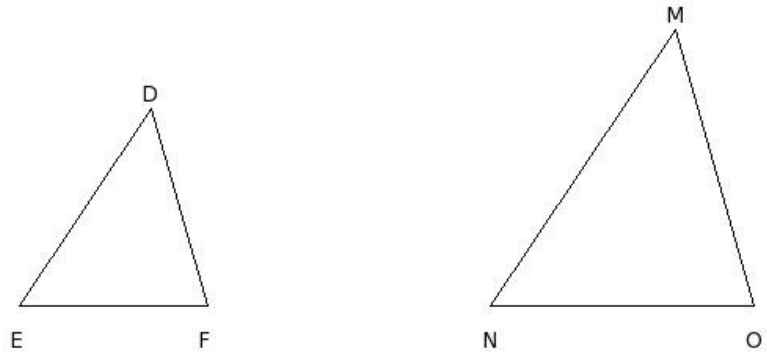
(i) {e,c} (ii) {a,b,c} (iii) {b,c,d} (iv) {a,e,d} (v) {a,b}

9. In the given figure, △LMN is isosceles right-angled at M and MO ⊥ NL. ∠O =



(i) ∠N (ii) ∠L (iii) ∠M (iv) ∠P (v) ∠Q

10. In the given figure, △DEF ~ △MNO and DE = 15 cm, MN = 21 cm.
If the area of the △DEF = 74.83 sq.cm, find the area of the △MNO



(i) 145.67 sq.cm (ii) 144.67 sq.cm (iii) 147.67 sq.cm (iv) 148.67 sq.cm (v) 146.67 sq.cm

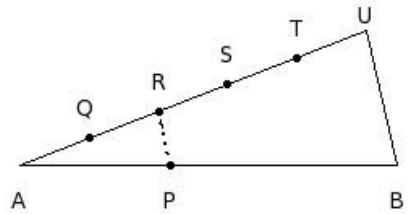
11. In a right angled triangle, if one of the sides is 18 cm and hypotenuse 82 cm, find the third side

(i) 82.00 cm (ii) 78.00 cm (iii) 79.00 cm (iv) 80.00 cm (v) 81.00 cm

12. The altitude and area of an equilateral triangle of side 'a' is

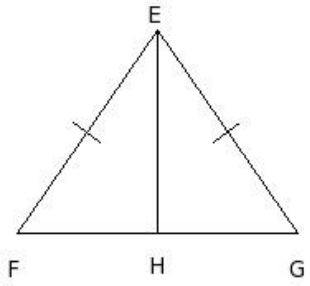
(i) $\sqrt{3}\,a, \frac{1}{2}\sqrt{3}\,a^2$ (ii) $\sqrt{3}\,a, \frac{1}{2}\sqrt{3}\,a$ (iii) $\frac{1}{2}\sqrt{3}\,a, \frac{1}{2}\sqrt{3}\,a^2$ (iv) $\frac{1}{2}\sqrt{3}\,a, \frac{1}{4}\sqrt{3}\,a^2$

13. In the given figure, if A, Q, R, S, T, U are equidistant and RP ∥ UB and AB = 23 cm and AP = 9 cm. Find PB



(i) 14.00 cm (ii) 13.00 cm (iii) 15.00 cm (iv) 16.00 cm (v) 12.00 cm

14. In the given figure, △EFG is a triangle in which EF = EG and H is a point on FG. Then

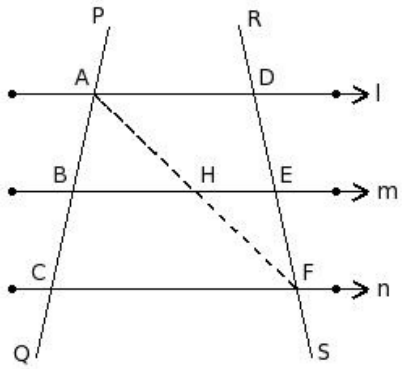


(i) $EF^2 - EH^2 = EH.GH$ (ii) $EF^2 + EH^2 = FG^2$ (iii) $EF^2 - EH^2 = FH.GH$ (iv) $EF^2 - EH^2 = EH.FH$

(v) $EF^2 + EH^2 = FH.GH$

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

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



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

16. Which of the following are true?

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

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

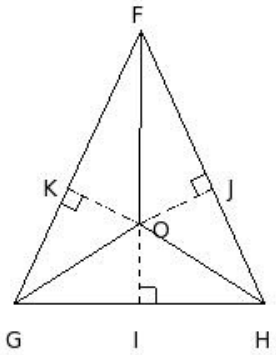
17. Which of the following are measures of an isosceles right angled triangle ?

(i) CD = 12 cm , DE = 15 cm , EC = 11 cm (ii) CD = 15 cm , DE = 23 cm , EC = 14 cm

(iii) CD = 15 cm , DE = 15 cm , EC = 21.21 cm (iv) CD = 11 cm , DE = 10 cm , EC = 13 cm

(v) CD = 10 cm , DE = 10 cm , EC = 10 cm

18. In the given figure, in △FGH, 'O' is a point inside the triangle. OI ⊥ GH, OJ ⊥ FH and OK ⊥ FG. Then

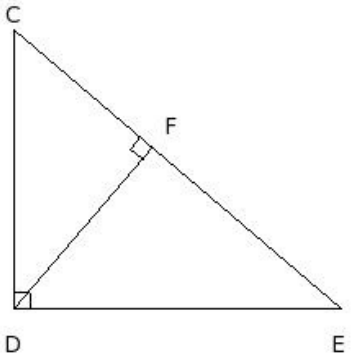


(i) $FK^2 + GI^2 + HJ^2 = OF^2 + OG^2 + OH^2 + OI^2 + OJ^2 + OK^2$ (ii) $FK^2 + GI^2 + HJ^2 = OK^2 + OJ^2 + OI^2$

(iii) $FK^2 + GI^2 + HJ^2 = FG^2 + IH^2 + HF^2 - GK^2 - HI^2 - JF^2$

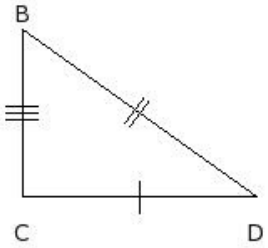
(iv) $FK^2 + GI^2 + HJ^2 = OF^2 + OG^2 + OH^2 - OI^2 - OJ^2 - OK^2$

19. In the given figure, △CDE is right-angled at D. Also, DF ⊥ CE. If DE = 20 cm, DF = 12.95 cm, then find CD.



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

20. Which of the following are measures of a right angled triangle ?



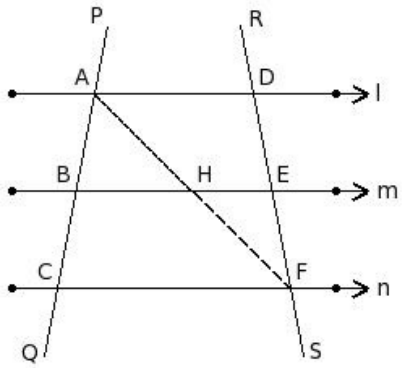
(i) BC = 11 cm , CD = 11 cm , DB = 11 cm (ii) BC = 12 cm , CD = 14 cm , DB = 13 cm

(iii) BC = 14 cm , CD = 13 cm , DB = 11 cm (iv) BC = 15 cm , CD = 23 cm , DB = 15 cm

(v) BC = 10 cm , CD = 14 cm , DB = 17.2 cm

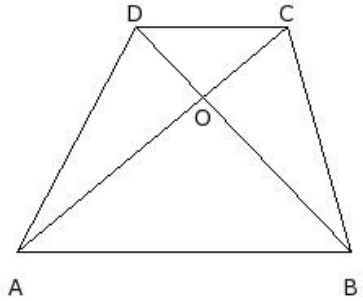
In the given figure, three lines l , m and n are such that l ∥ m ∥ n.

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



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

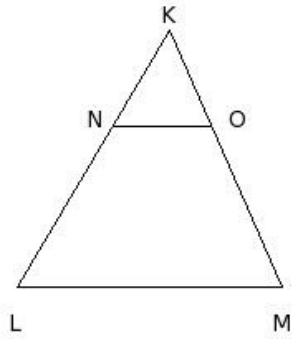
22. In the given figure, ABCD is a trapezium where OA = 14 cm , OC = 5 cm and OD = 5 cm . Find OB =



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

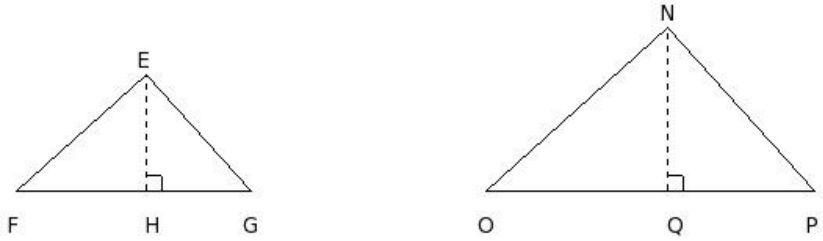
23. In the given figure, N and O are points on the sides KL and KM respectively of △KLM.For which of the following cases, NO ∥ LM

a) KL = 18 cm, NL = 11.25 cm, KO = 8.38 cm and KM = 17 cm
b) KL = 18 cm, NL = 11.25 cm, KM = 17 cm and KO = 6.38 cm
c) KL = 18 cm, KN = 8.75 cm, KM = 17 cm and OM = 10.62 cm
d) KN = 6.75 cm, NL = 11.25 cm, KO = 6.38 cm and OM = 10.62 cm



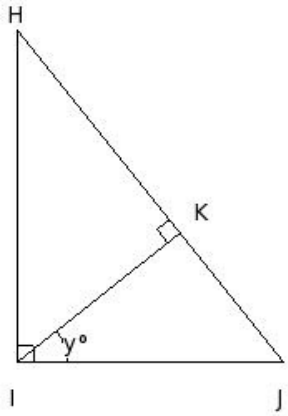
(i) {a,c,b} (ii) {c,d} (iii) {a,b} (iv) {b,d} (v) {a,d,b}

24. In the given figure, △EFG ~ △NOP and FG = 15 cm , OP = 21 cm and NQ = 10.26 cm , find the area of the △EFG



(i) 54.99 sq.cm (ii) 52.99 sq.cm (iii) 56.99 sq.cm (iv) 53.99 sq.cm (v) 55.99 sq.cm

25. In the given figure, ∠IJK = 51.52°, find the value of y =



(i) 38.48° (ii) 40.48° (iii) 37.48° (iv) 39.48° (v) 36.48°

Assignment Key

1) (i)	2) (v)	3) (i)	4) (i)	5) (iii)	6) (iv)
7) (ii)	8) (iii)	9) (iii)	10) (v)	11) (iv)	12) (iv)
13) (i)	14) (iii)	15) (i)	16) (v)	17) (iii)	18) (iv)
19) (iii)	20) (v)	21) (iv)	22) (iv)	23) (iv)	24) (i)
25) (i)					