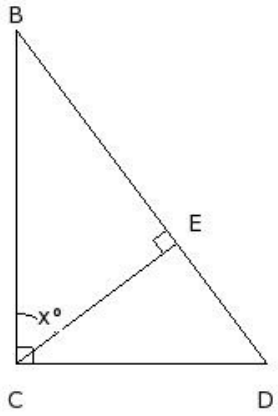
EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Similarity of Triangles

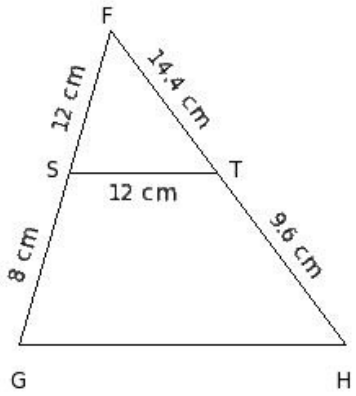
Grade : ICSE Grade X

1. In the given figure, ∠EBC = 36.87°, find the value of x =



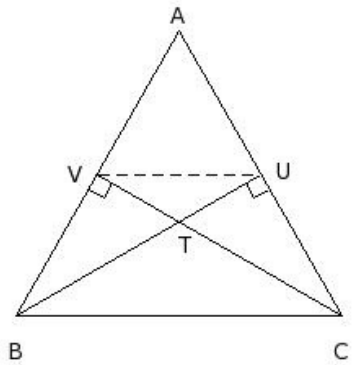
(i) 53.13° (ii) 52.13° (iii) 51.13° (iv) 54.13° (v) 55.13°

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



(i) 22.0 cm (ii) 20.0 cm (iii) 18.0 cm (iv) 21.0 cm (v) 19.0 cm

3. In the given figure, the altitudes UB and CV of △ABC meet at T. ∠UTC =



(i) ∠TVB (ii) ∠TCU (iii) ∠BTV (iv) ∠VBT (v) ∠CUT

4. 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?

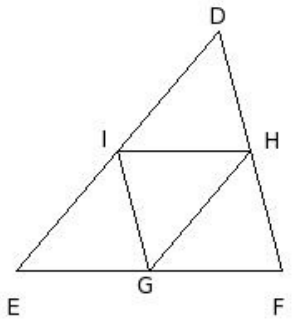
a) Area of △DEF = 4 times area of △GHI

b) Area of trapezium EFHI is thrice the area of △DIH

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

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

e) All four small triangles have equal areas



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

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

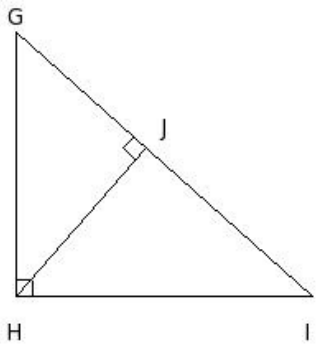
a) $GH^2 = IG \cdot IJ$

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

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

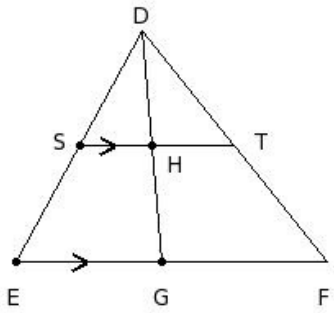
d) $GH^2 = GI \cdot GJ$

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



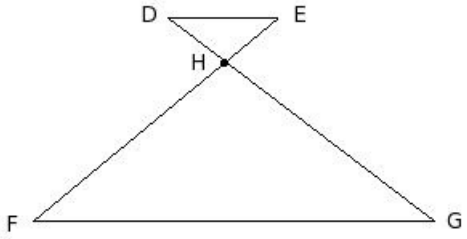
(i) {a,b} (ii) {b,c,d} (iii) {a,e,d} (iv) {a,b,c} (v) {e,c}

6. In the given figure, ST ∥ EF , and median DG bisects ST.
If DG = 14.2 cm, DF = 18 cm and DH = 7.1 cm, DT =



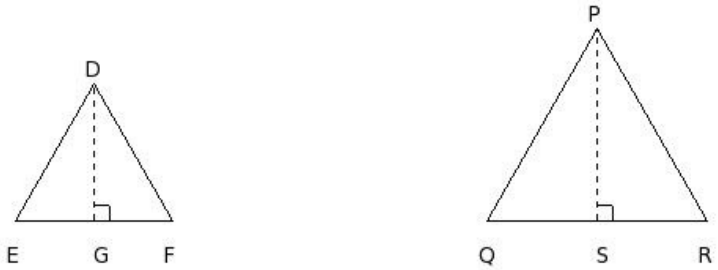
(i) 8.00 cm (ii) 11.00 cm (iii) 10.00 cm (iv) 7.00 cm (v) 9.00 cm

7. In the given figure, if DE ∥ FG then



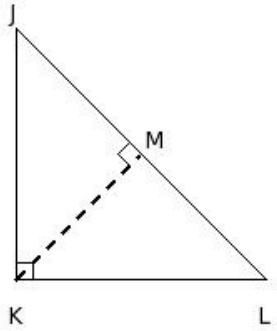
(i) △DEH ~ △HFG (ii) △HED ~ △HGF (iii) △DEH ~ △HGF (iv) △DEH ~ △GFH (v) △HDE ~ △HFG

8. In the given figure, △DEF ~ △PQR and EF = 10 cm , QR = 14 cm and DG = 8.66 cm , find the area of the △PQR



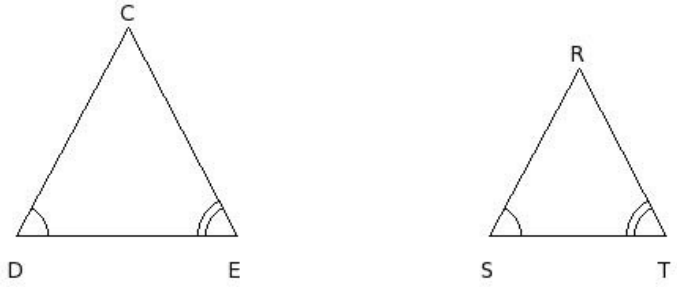
(i) 83.87 sq.cm (ii) 84.87 sq.cm (iii) 82.87 sq.cm (iv) 86.87 sq.cm (v) 85.87 sq.cm

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



(i) ∠N (ii) ∠K (iii) ∠J (iv) ∠O (v) ∠M

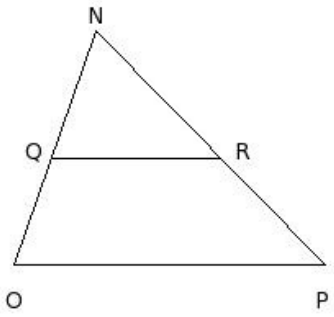
10. In the given figure, △CDE and △RST are such that ∠D = ∠S and ∠E = ∠T. Identify the property by which the two triangles are similar



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

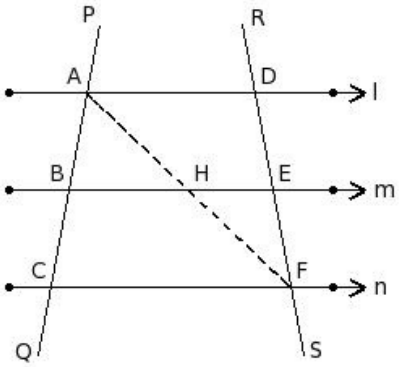
11. In the given figure, Q and R are points on the sides NO and NP respectively of △NOP.For which of the following cases, QR ∥ OP

a) NO = 15 cm, QO = 6.82 cm, NR = 12.91 cm and NP = 20 cm
b) NO = 15 cm, QO = 6.82 cm, NP = 20 cm and NR = 10.91 cm
c) NO = 15 cm, NQ = 10.18 cm, NP = 20 cm and RP = 9.09 cm
d) NQ = 8.18 cm, QO = 6.82 cm, NR = 10.91 cm and RP = 9.09 cm



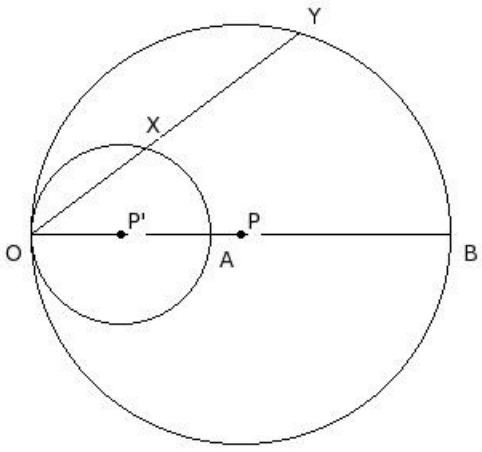
(i) {a,d,b} (ii) {a,b} (iii) {a,c,b} (iv) {c,d} (v) {b,d}

12. In the given figure, three lines l , m and n are such that l ∥ m ∥ n.
Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.
∠FDA =



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

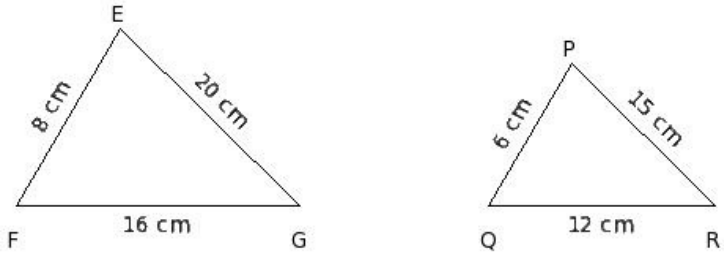
13. In the given figure, the two circles touch each other internally.
Diameter OB passes through the centre of the smaller circle.
OX = 9 cm , OY = 21 cm and radius of the inner circle is 5.6 cm .
Find the radius of the outer circle.



(i) 15.07 cm (ii) 12.07 cm (iii) 13.07 cm (iv) 14.07 cm (v) 11.07 cm

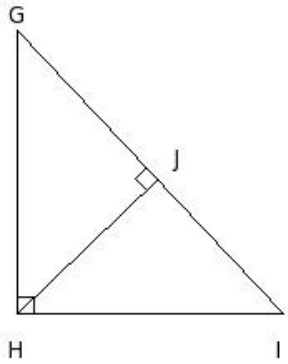
14. In the given figure, △EFG and △PQR are such that $\frac{EF}{PQ} = \frac{FG}{QR} = \frac{GE}{RP}$.

Identify the property by which the two triangles are similar



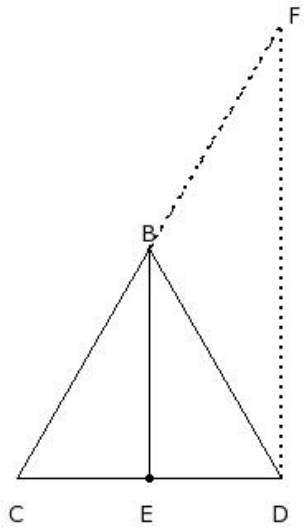
(i) SSS Similarity (ii) AAA Similarity (iii) not similar (iv) SAS Similarity

15. In the given figure, △GHI is right-angled at H. Also, HJ ⊥ GI. If GJ = 12.3 cm, HJ = 11.63 cm, then find JI.



(i) 12.00 cm (ii) 13.00 cm (iii) 11.00 cm (iv) 10.00 cm (v) 9.00 cm

16. 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 . ∠BDF =

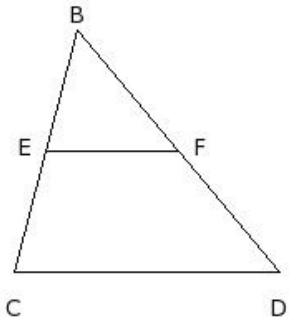


(i) ∠CEB (ii) ∠EDB (iii) ∠EBC (iv) ∠BED (v) ∠FBD

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

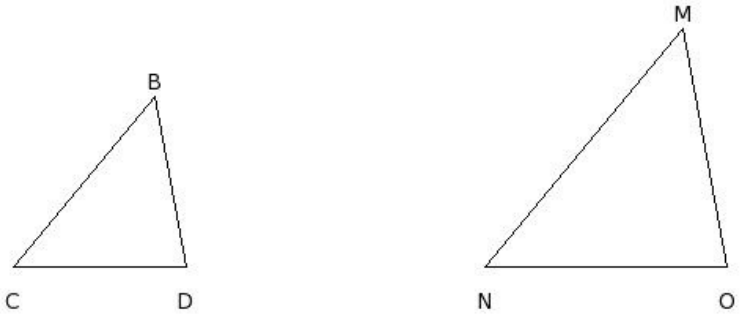
(i) not similar (ii) SSS Similarity (iii) AAA Similarity (iv) SAS Similarity

18. In the given △BCD, EF ∥ CD. If BE : EC = 7.5 cm : 7.5 cm and BD = 19 cm, BF =



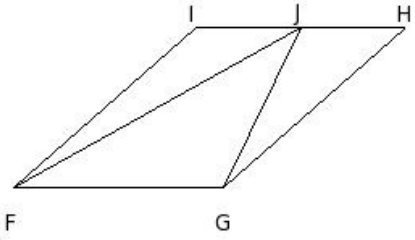
(i) 11.50 cm (ii) 9.50 cm (iii) 10.50 cm (iv) 7.50 cm (v) 8.50 cm

19. In the given figure, △BCD ~ △MNO and BC = 14 cm, MN = 19.6 cm.
If the area of the △MNO = 116.42 sq.cm, find the area of the △BCD



(i) 60.40 sq.cm (ii) 61.40 sq.cm (iii) 57.40 sq.cm (iv) 58.40 sq.cm (v) 59.40 sq.cm

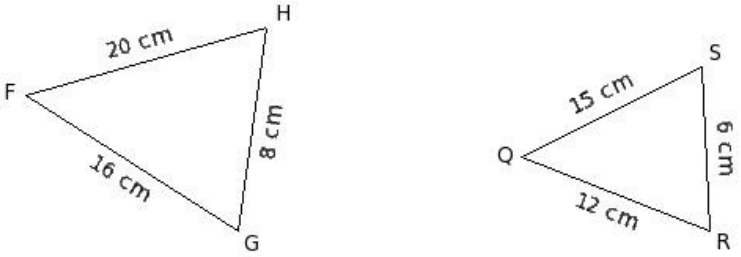
20. In the given figure, the parallelogram FGHI and the triangle △JFG are on the same bases and between the same parallels.
The area of the △JFG is x sq.cm. The area of the parallelogram is



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

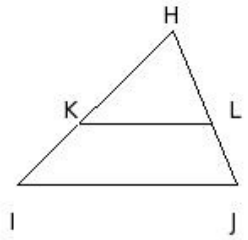
(iv) $\frac{3}{2}$ the area of the triangle (v) thrice the area of the triangle

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



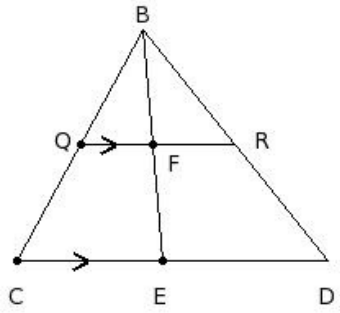
(i) not similar (ii) SSS Similarity (iii) SAS Similarity (iv) AAA Similarity

22. In the given figure, $KL \parallel IJ$.
If $HK = 8.22$ cm, $HI = 13.7$ cm and $HJ = 10.2$ cm, find HL



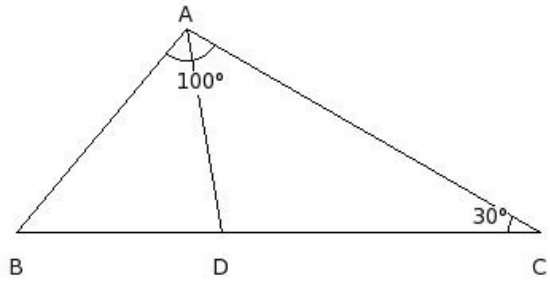
(i) 6.12 cm (ii) 5.12 cm (iii) 7.12 cm (iv) 8.12 cm (v) 4.12 cm

23. In the given figure, QR ∥ CD , and median BE bisects QR.
If BC = 16 cm, BE = 16.1 cm and BQ = 8 cm, QC =



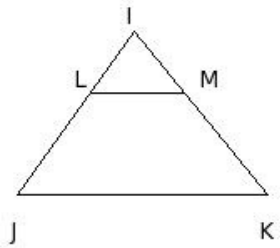
(i) 9.00 cm (ii) 7.00 cm (iii) 6.00 cm (iv) 8.00 cm (v) 10.00 cm

24. In the given figure, D is a point on side BC of △ABC such that ∠CAB = ∠ADC = 100° , ∠DCA = 30°. Find ∠CAD



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

25. In the given figure, $LM \parallel JK$. If $\frac{IL}{LJ} = \frac{3}{5}$ and $IK = 13.4$ cm, find IM



(i) 4.03 cm (ii) 3.03 cm (iii) 5.03 cm (iv) 7.03 cm (v) 6.03 cm

Assignment Key

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