EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Similarity of Triangles

Grade : ICSE Grade X

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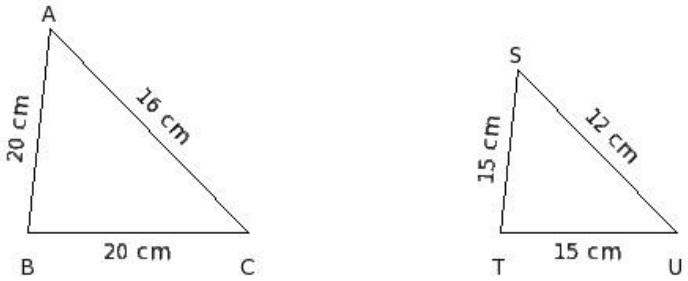
1. If the ratio of the bases of two triangles is B : C and the ratio of the corresponding heights is D : E , the ratio of their areas in the same order is

(i) DE : BC (ii) BD : CE (iii) CD : BE (iv) BC : DE (v) BE : CD

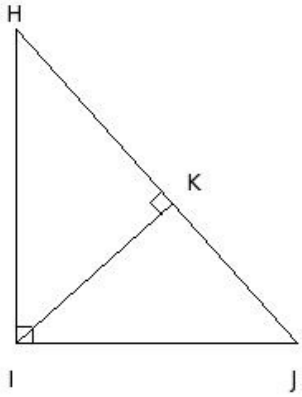
2. In the given figure, △ABC and △STU are such that $\frac{AB}{ST} = \frac{BC}{TU} = \frac{CA}{US}$.

Identify the property by which the two triangles are similar



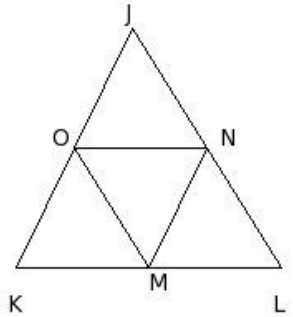
(i) SAS Similarity (ii) not similar (iii) AAA Similarity (iv) SSS Similarity

3. In the given figure, △HIJ is right-angled at I. Also, IK ⊥ HJ. If IJ = 17 cm, IK = 12.67 cm, then find HI.



(i) 19.00 cm (ii) 21.00 cm (iii) 17.00 cm (iv) 18.00 cm (v) 20.00 cm

4. In the given figure, the area of the △JKL is x sq.cm. M,N,O are the mid-points of the sides KL , LJ and JK respectively. The area of the △MNO is

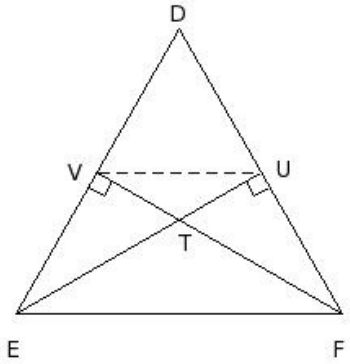


(i) $\frac{2}{3}$ of area of △JKL (ii) $\frac{1}{3}$ of area of △JKL (iii) $\frac{1}{2}$ of area of △JKL (iv) $\frac{1}{4}$ of area of △JKL (v) $\frac{3}{4}$ of area of △JKL

5. The perimeters of two similar triangles are 25 cm and 22 cm respectively. If one side of the first triangle is 9 cm, find the length of the corresponding side of the second triangle.

(i) 7.92 cm (ii) 6.92 cm (iii) 5.92 cm (iv) 8.92 cm (v) 9.92 cm

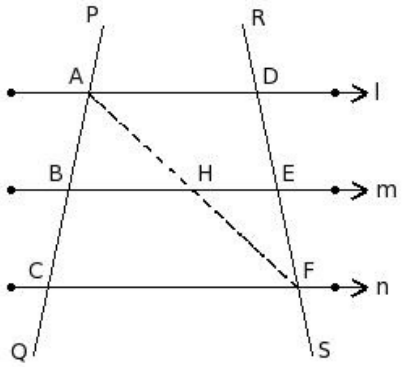
6. In the given figure, the altitudes UE and FV of △DEF meet at T. ∠UTF =



(i) ∠TFU (ii) ∠ETV (iii) ∠TVE (iv) ∠VET (v) ∠FUT

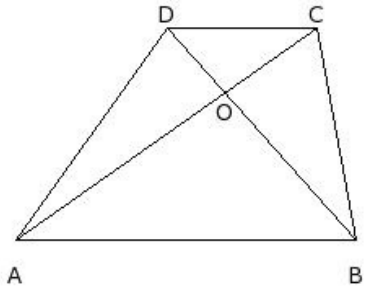
In the given figure, three lines l , m and n are such that l ∥ m ∥ n.

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



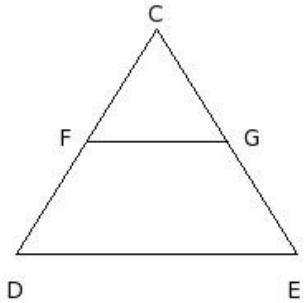
(i) ∠DAF (ii) ∠BHA (iii) ∠AFD (iv) ∠CFA (v) ∠HFE

8. In the given figure, ABCD is a trapezium where OA = 13 cm , OC = 4 cm and OD = 4 cm . Find OB =



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

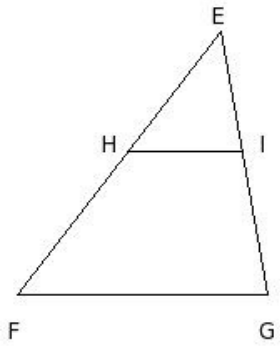
9. In the given △CDE, FG ∥ DE. If CF : FD = 8 cm : 8 cm and CE = 16 cm, CG =



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

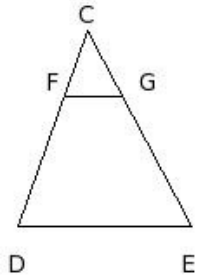
10. In the given figure, H and I are points on the sides EF and EG respectively of △EFG.For which of the following cases, HI ∥ FG

a) EF = 20 cm, HF = 10.91 cm, EI = 9.27 cm and EG = 16 cm
b) EH = 9.09 cm, HF = 10.91 cm, EI = 7.27 cm and IG = 8.73 cm
c) EF = 20 cm, EH = 11.09 cm, EG = 16 cm and IG = 8.73 cm
d) EF = 20 cm, HF = 10.91 cm, EG = 16 cm and EI = 7.27 cm



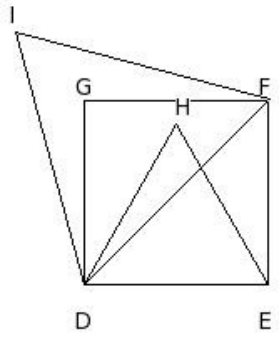
(i) {a,d,b} (ii) {a,b} (iii) {b,d} (iv) {c,d} (v) {a,c,b}

11. In the given figure, $FG \parallel DE$.
If $CF = 4.27$ cm, $CD = 12.8$ cm and $CE = 13.6$ cm, find CG



(i) 6.53 cm (ii) 5.53 cm (iii) 2.53 cm (iv) 4.53 cm (v) 3.53 cm

12. DEFG is a square and △DEH is an equilateral triangle. Also, △DFI is an equilateral triangle. If area of △DEH is 'a' sq.units, then the area of △DFI is

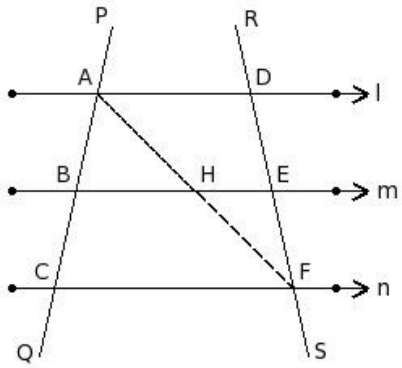


(i) $\frac{1}{2}\sqrt{3}$ a sq.units (ii) a^2 sq.units (iii) $\frac{1}{2}$ a sq.units (iv) $\sqrt{3}$ a sq.units (v) 2a sq.units

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

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

△FEH ~

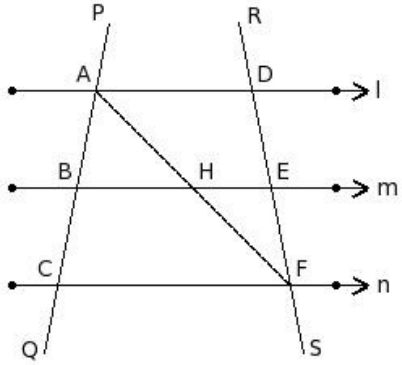


(i) △FDA (ii) △DCF (iii) △DAE (iv) △ABH (v) △ACF

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

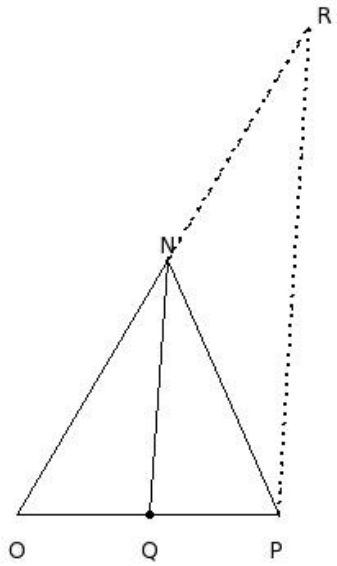
14. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.

∠FEH =



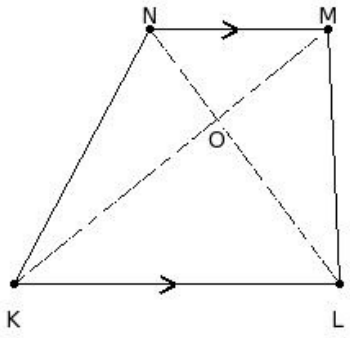
(i) ∠ABH (ii) ∠DAF (iii) ∠EHF (iv) ∠ACF (v) ∠FDA

15. In the given figure, △NOP is a triangle in which NQ is the internal bisector of ∠N and PR ∥ QN meeting ON produced at R . ∠NPR =



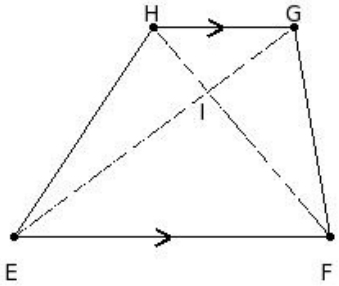
(i) ∠NQP (ii) ∠PNQ (iii) ∠QPN (iv) ∠RNP (v) ∠OQN

16. In the given figure, KLMN is a trapezium in which KL ∥ MN and the diagonals LN and KM intersect at O. △OKL ~



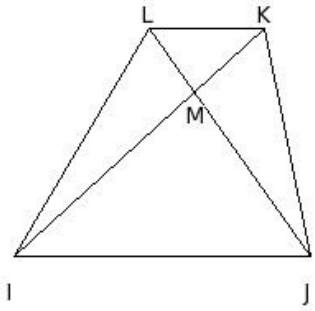
(i) △NKL (ii) △OMN (iii) △ONK (iv) △LMN (v) △OLM

17. In the given figure, EFGH is a trapezium in which EF ∥ GH and the diagonals FH and EG intersect at I. If IE = $(x+32)$ cm, FI = $(2x+24)$ cm, IG = $(x+18)$ cm and HI = $(2x+4)$ cm, find the value of x



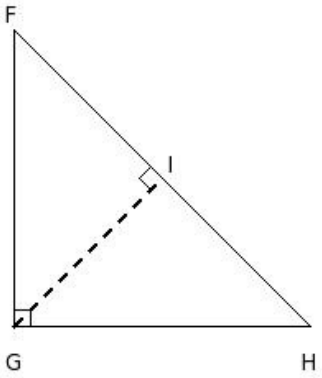
(i) (40,40) (ii) (38,37) (iii) (41,38) (iv) (39,39) (v) (38,38)

18. IJKL is a cyclic trapezium. Diagonals JL and IK intersect at M. If LI = 16 cm, find JK



(i) 16 cm (ii) 14 cm (iii) 15 cm (iv) 18 cm (v) 17 cm

19. In the given figure, △FGH is isosceles right-angled at G and GI ⊥ HF. ∠HIG =

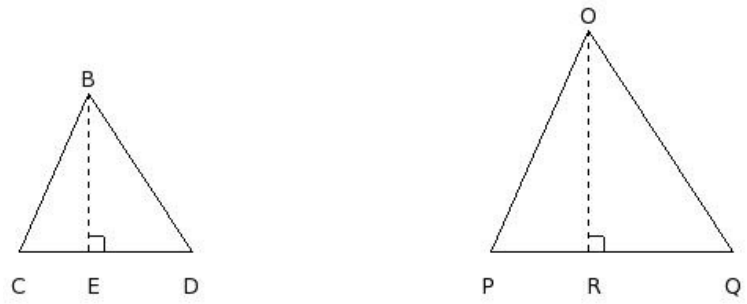


(i) ∠GHI (ii) ∠FGH (iii) ∠IFG (iv) ∠IGH (v) ∠FGI

20. The ratio of the bases of two triangles ABC and DEF is $5:10$.
If the triangles are equal in area, then the ratio of their heights is

(i) $10:5$ (ii) $5:12$ (iii) $5:7$ (iv) $6:10$ (v) $4:10$

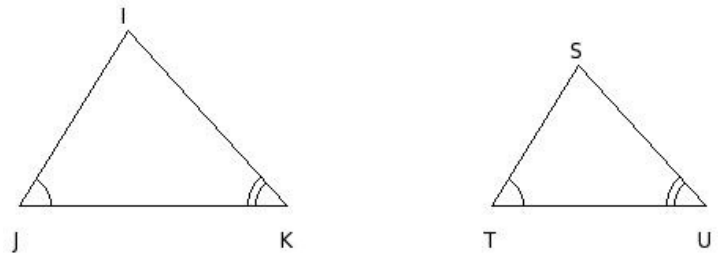
21. In the given figure, △BCD & △OPQ are similar triangles. If the ratio of the heights BE : OR = 10 : 14, then the ratio of their areas is



(i) $101\,\text{sq.cm}:196\,\text{sq.cm}$ (ii) $100\,\text{sq.cm}:194\,\text{sq.cm}$ (iii) $100\,\text{sq.cm}:199\,\text{sq.cm}$ (iv) $100\,\text{sq.cm}:196\,\text{sq.cm}$

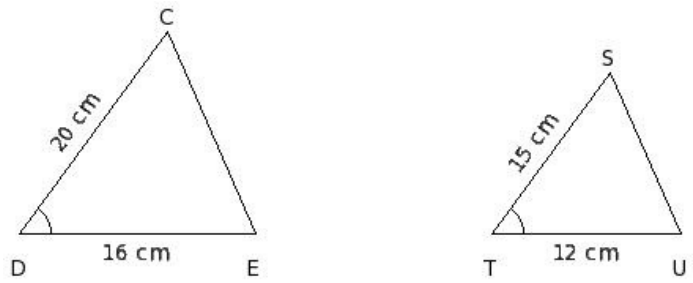
(v) $99\,\text{sq.cm}:196\,\text{sq.cm}$

22. In the given figure, △IJK and △STU are such that
$\angle J = \angle T$ and $\angle K = \angle U$.
Identify the property by which the two triangles are similar



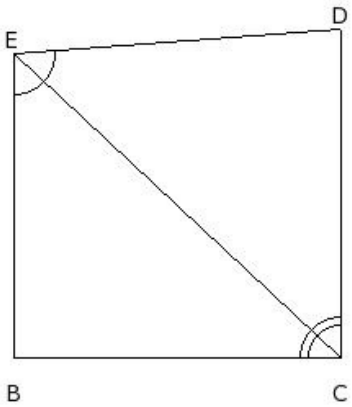
(i) AAA Similarity (ii) not similar (iii) SSS Similarity (iv) SAS Similarity

23. In the given figure, △CDE and △STU are such that
$\angle D = \angle T$ and $\frac{CD}{ST} = \frac{DE}{TU}$.
Identify the property by which the two triangles are similar



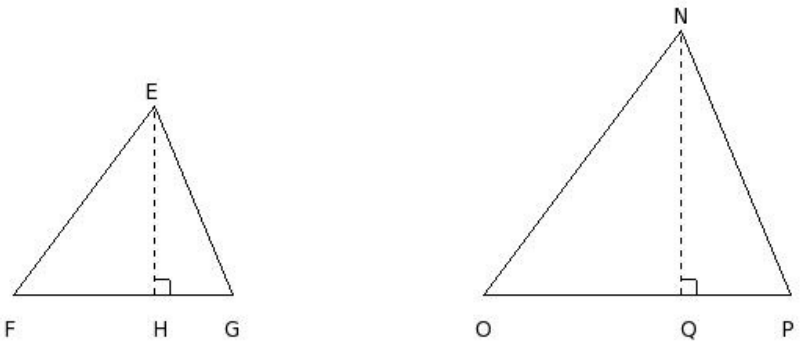
(i) AAA Similarity (ii) not similar (iii) SAS Similarity (iv) SSS Similarity

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



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

25. In the given figure, $\triangle EFG \sim \triangle NOP$ and FG = 14 cm , OP = 19.6 cm and
$EH = 12$ cm, find the area of the $\triangle NOP$



(i) 162.64 sq.cm (ii) 165.64 sq.cm (iii) 166.64 sq.cm (iv) 164.64 sq.cm (v) 163.64 sq.cm

Assignment Key

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