EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Similarity of Triangles

Grade : ICSE Grade X

1. In the given figure, points M , N and O are the mid-points of sides KL, LJ and JK of △JKL. Which of the following are true?

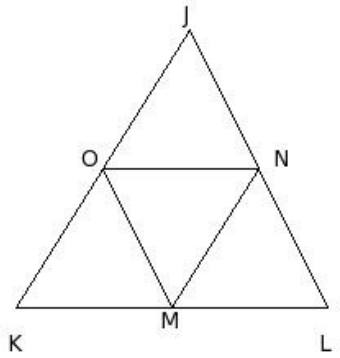
a) Area of trapezium KLNO is $\frac{1}{4}$ the area of △JKL

b) Area of trapezium KLNO is thrice the area of △JON

c) Area of △JKL = $\frac{1}{3}$ area of △MNO

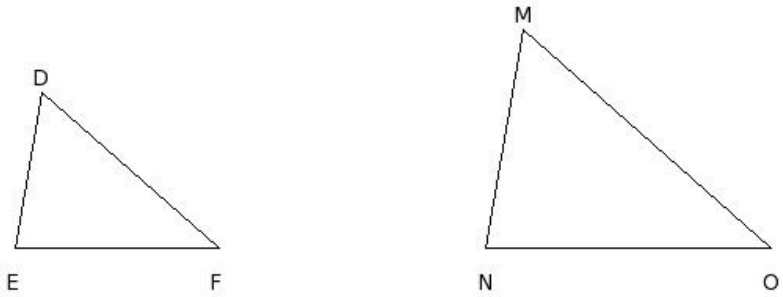
d) Area of △JKL = 4 times area of △MNO

e) All four small triangles have equal areas



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

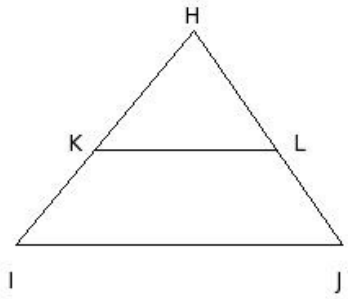
2. In the given figure, △DEF ~ △MNO and DE = 10 cm, MN = 14 cm.
If the area of the △MNO = 125.56 sq.cm, find the area of the △DEF



(i) 64.06 sq.cm (ii) 63.06 sq.cm (iii) 62.06 sq.cm (iv) 66.06 sq.cm (v) 65.06 sq.cm

3. In the given figure, K and L are points on the sides HI and HJ respectively of △HIJ.For which of the following cases, KL ∥ IJ

a) HI = 17 cm, KI = 7.56 cm, HJ = 16 cm and HL = 8.89 cm
b) HI = 17 cm, HK = 11.44 cm, HJ = 16 cm and LJ = 7.11 cm
c) HK = 9.44 cm, KI = 7.56 cm, HL = 8.89 cm and LJ = 7.11 cm
d) HI = 17 cm, KI = 7.56 cm, HL = 10.89 cm and HJ = 16 cm

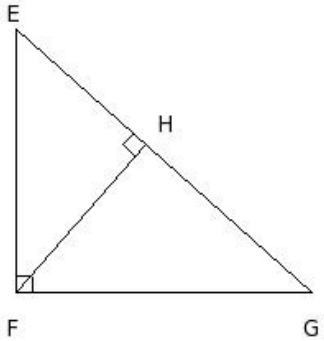


(i) {a,c} (ii) {b,d,a} (iii) {b,a} (iv) {d,c} (v) {b,c,a}

4. The perimeters of two similar triangles are 27 cm and 17 cm respectively. If one side of the first triangle is 15 cm, find the length of the corresponding side of the second triangle.

(i) 11.44 cm (ii) 7.44 cm (iii) 10.44 cm (iv) 9.44 cm (v) 8.44 cm

5. In the given figure, △EFG is right-angled at F. Also, FH ⊥ EG. If EH = 10.6 cm, HG = 13.5 cm, then find FH.

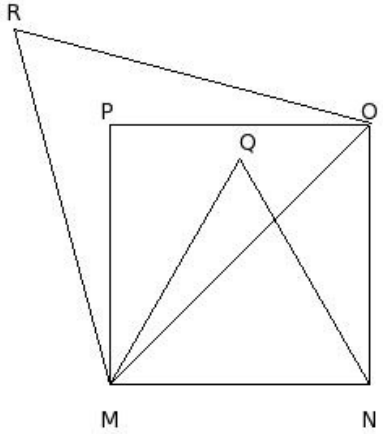


(i) 12.96 cm (ii) 10.96 cm (iii) 11.96 cm (iv) 9.96 cm (v) 13.96 cm

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

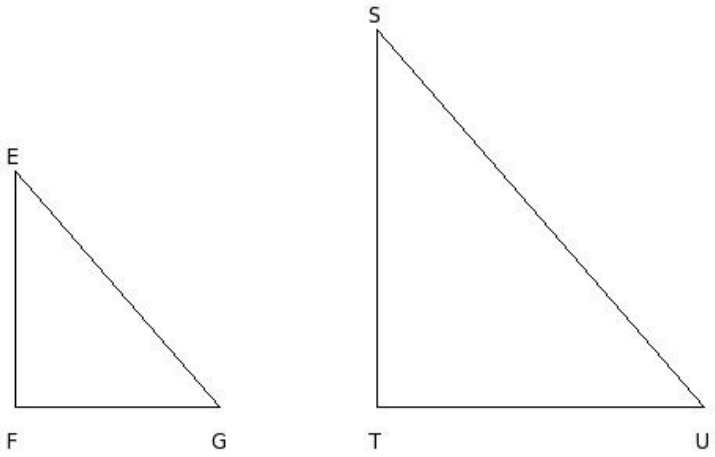
7. MNOP is a square and △MNQ is an equilateral triangle. Also, △MOR is an equilateral triangle. If area of △MNQ is 'a' sq.units, then the area of △MOR is



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

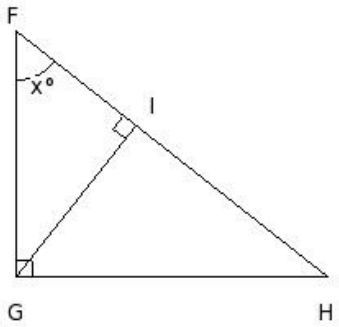
A vertical stick 15 m long casts a shadow of 13 m long on the ground.

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



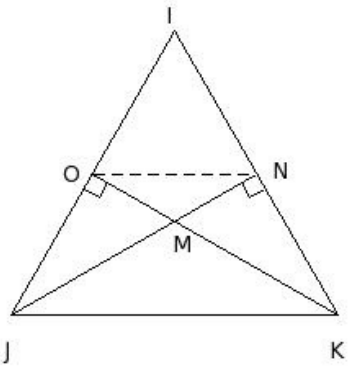
(i) 121 m (ii) 119 m (iii) 118 m (iv) 122 m (v) 120 m

9. In the given figure, ∠FGI = 38.43°, find the value of x =



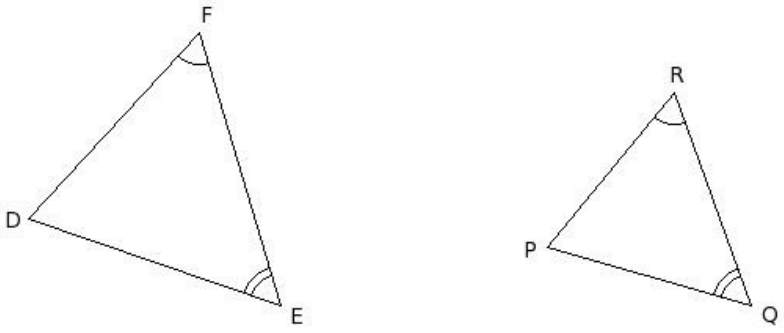
(i) 49.57° (ii) 52.57° (iii) 53.57° (iv) 51.57° (v) 50.57°

10. In the given figure, the altitudes NJ and KO of △IJK meet at M. ∠OJM =



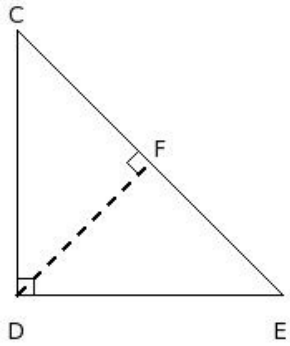
(i) ∠MKN (ii) ∠NMK (iii) ∠MOJ (iv) ∠KNM (v) ∠JMO

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



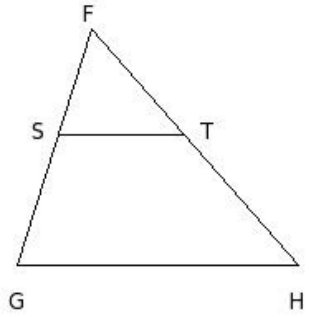
(i) AAA Similarity (ii) SAS Similarity (iii) SSS Similarity (iv) not similar

12. In the given figure, △CDE is isosceles right-angled at D and DF ⊥ EC. ∠DFC =



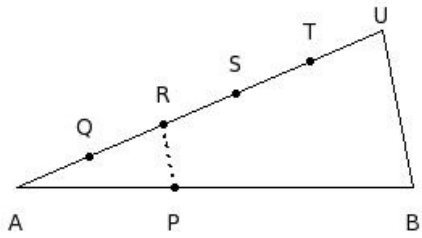
(i) ∠CDE (ii) ∠DEF (iii) ∠FDE (iv) ∠CDF (v) ∠FCD

13. In the given figure, △FGH, ST ∥ GH such that area of △FST = area of STHG. Find $\frac{FS}{FG}$



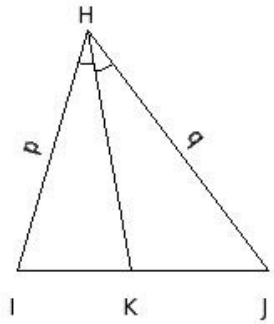
(i) $\frac{1}{2}\sqrt{4}$ (ii) 1 (iii) $\frac{1}{2}\sqrt{\frac{1}{2}}$ (iv) $\frac{1}{2}\sqrt{\frac{4}{2}}$ (v) $\frac{1}{2}\sqrt{2}$

14. In the given figure, if A, Q, R, S, T, U are equidistant and RP ∥ UB and AB = 25 cm and AP = 10 cm. Find PB



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

15. In the given figure, given ∠KHI = ∠JHK, p = 6.82 cm, q = 8.18 cm and IJ = 15 cm, find KJ =



(i) 6.18 cm (ii) 8.18 cm (iii) 9.18 cm (iv) 7.18 cm (v) 10.18 cm

16. In the given figure, △EFG is right-angled at F. Also, FH ⊥ EG. Which of the following are true?

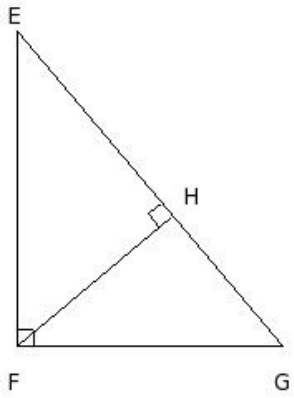
a) $FG^2 = EG \cdot EH$

b) $FG^2 = GE \cdot GH$

c) $EF^2 = GE \cdot GH$

d) $FH^2 = EH \cdot HG$

e) $EF^2 = EG \cdot EH$

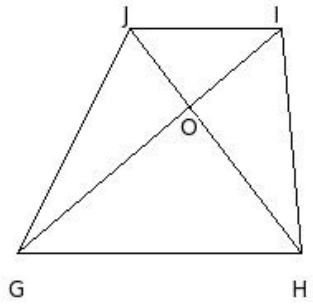


(i) {a,c,e} (ii) {a,b,d} (iii) {b,d,e} (iv) {a,b} (v) {c,d}

17. The ratio of the bases of two triangles ABC and DEF is $8:9$.
If the triangles are equal in area, then the ratio of their heights is

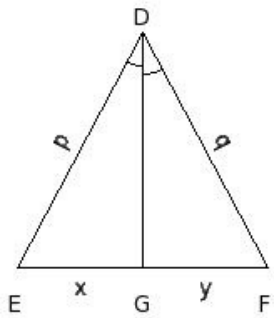
(i) $7:9$ (ii) $9:9$ (iii) $8:12$ (iv) $8:6$ (v) $9:8$

18. In the given figure, GHIJ is a trapezium where OG = 13 cm , OH = 13 cm and OJ = 4 cm . Find OI =



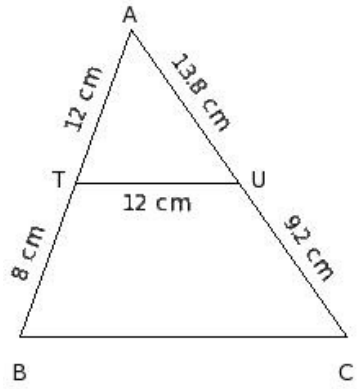
(i) 5 cm (ii) 2 cm (iii) 4 cm (iv) 6 cm (v) 3 cm

19. In the given figure, given ∠GDE = ∠FDG, x : y = 7.5 cm : 7.5 cm and q = 16 cm, find p =



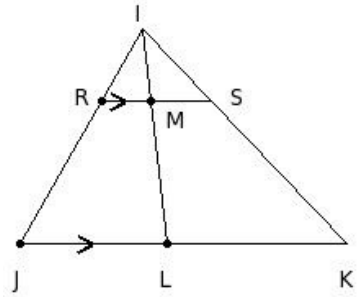
(i) 14.00 cm (ii) 17.00 cm (iii) 15.00 cm (iv) 18.00 cm (v) 16.00 cm

20. If the measures are as shown in the given figure, find BC



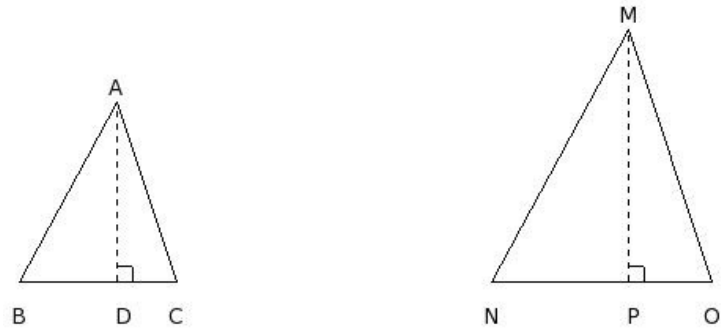
(i) 19.0 cm (ii) 20.0 cm (iii) 22.0 cm (iv) 18.0 cm (v) 21.0 cm

21. In the given figure, RS ∥ JK , and median IL bisects RS.
If IL = 13.2 cm, IK = 18 cm and IS = 6 cm, IM =



(i) 2.40 cm (ii) 5.40 cm (iii) 6.40 cm (iv) 4.40 cm (v) 3.40 cm

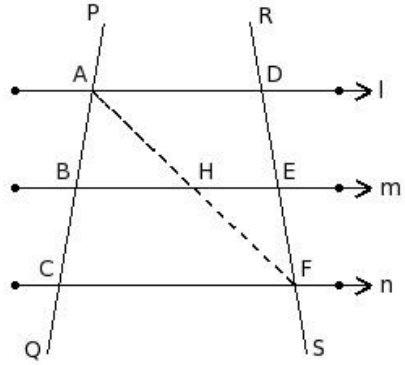
22. In the given figure, △ABC & △MNO are similar triangles. If the ratio of the heights AD : MP = 11 : 16, then the ratio of their areas is



(i) 121 sq.cm : 256 sq.cm (ii) 122 sq.cm : 256 sq.cm (iii) 120 sq.cm : 256 sq.cm (iv) 121 sq.cm : 259 sq.cm

(v) 121 sq.cm : 253 sq.cm

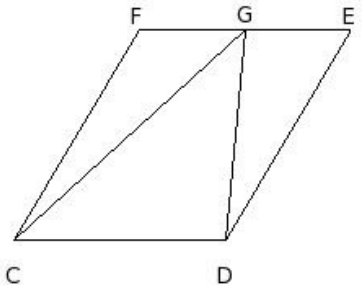
In the given figure, three lines l , m and n are such that l ∥ m ∥ n.
23. Two transversals PQ and RS intersect them at the points A , B , C and D , E , F respectively.
∠FEH =



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

24. In the given figure, the parallelogram CDEF and the triangle △GCD are on the same bases and between the same parallels.

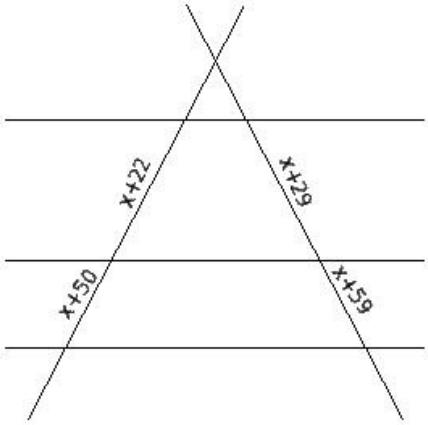
The area of the △GCD is x sq.cm. The area of the parallelogram is



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

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

25. From the given figure and values, find x



(i) (78,76) (ii) (76,75) (iii) (77,77) (iv) (78,78) (v) (76,76)

Assignment Key

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