EduSahara™ Worksheet

Name : Chapter Based Worksheet

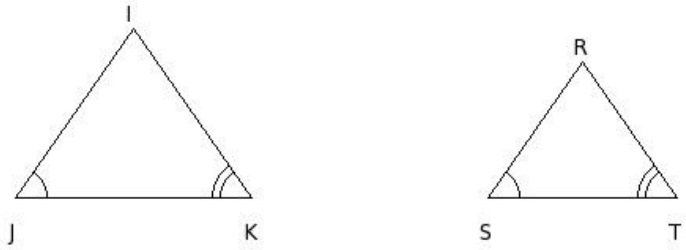
Chapter : Triangles

Grade : CBSE Grade X

In the given figure, △IJK and △RST are such that

1. $\angle J = \angle S$ and $\angle K = \angle T$.

Identify the property by which the two triangles are similar



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

2. Which of the following are true?

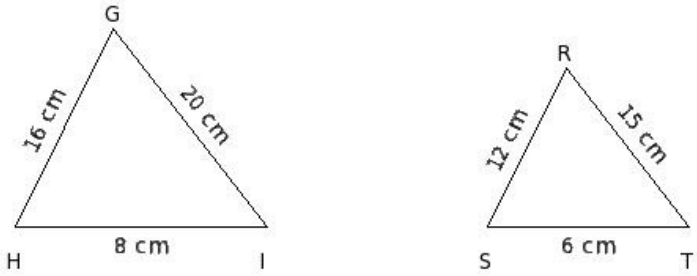
a) A circle is a polygonal region.
b) A square is a polygonal region.
c) A semi-circle is a polygonal region.
d) A triangle is a polygonal region.
e) A sector is a polygonal region.

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

In the given figure, △GHI and △RST are such that

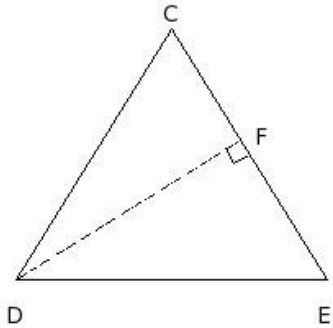
3. $\frac{GH}{RS} = \frac{HI}{ST} = \frac{IG}{TR}$.

Identify the property by which the two triangles are similar



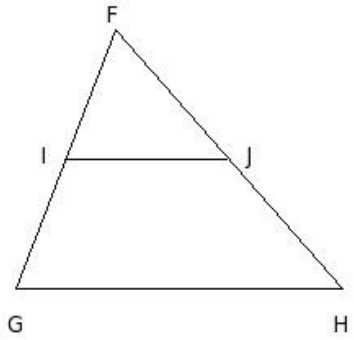
(i) SAS Similarity (ii) AAA Similarity (iii) not similar (iv) SSS Similarity

4. In the given figure, △CDE is isosceles with CD = CE and DF ⊥ CE. Then



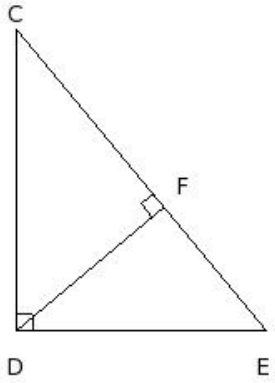
(i) $DF^2 - CF^2 = 2EF.CF$ (ii) $DF^2 + EF^2 = 2EF.CF$ (iii) $DF^2 - EF^2 = 2EF.CF$ (iv) $DF^2 + CF^2 = 2EF.CF$

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



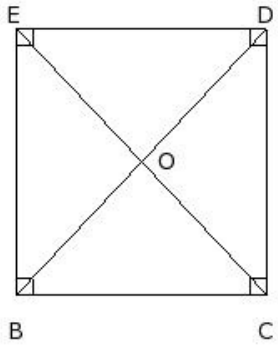
(i) FJ (ii) JH (iii) FG (iv) FI (v) HF

6. In the given figure, $\triangle CDE$ is right-angled at D. Also, DF $\perp$ CE. If CD = 18 cm, DF = 11.52 cm, then find DE.



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

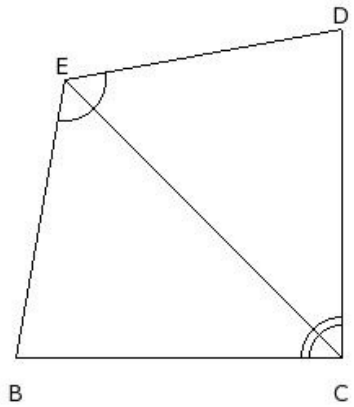
7. In the given figure, O is a point in the interior of the rectangle BCDE. Then



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

8. In the given figure, CE is the angular bisector of $\angle C \& \angle E$
$BC = 20$ cm, $CD = 20$ cm and $DE = 17$ cm. Find EB



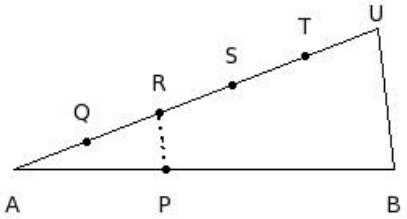
(i) 16.00 cm (ii) 18.00 cm (iii) 15.00 cm (iv) 19.00 cm (v) 17.00 cm

9. Which of the following are true?

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

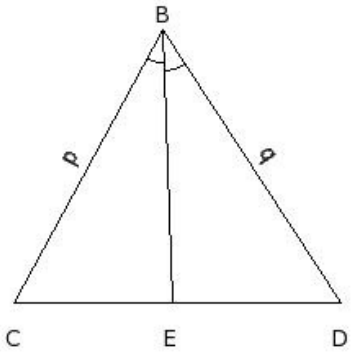
(i) {b,a} (ii) {d,c} (iii) {a,c} (iv) {b,c,a} (v) {b,d,a}

10. In the given figure, if A, Q, R, S, T, U are equidistant and RP ∥ UB and AB = 24 cm. Find AP



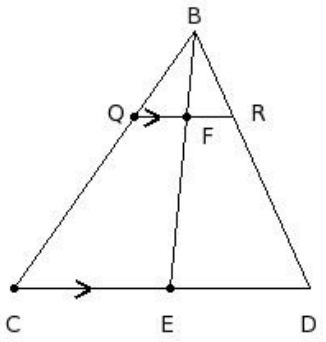
(i) 8.60 cm (ii) 9.60 cm (iii) 11.60 cm (iv) 7.60 cm (v) 10.60 cm

11. In the given figure, given $\angle EBC = \angle DBE$, p = 9.74 cm, q = 10.26 cm and CD = 20 cm, find ED =



(i) 12.26 cm (ii) 8.26 cm (iii) 9.26 cm (iv) 11.26 cm (v) 10.26 cm

12. In the given figure, QR ∥ CD , and median BE bisects QR. △BFR ~



(i) △BCD (ii) △BQF (iii) △BED (iv) △CDB (v) △BCE

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

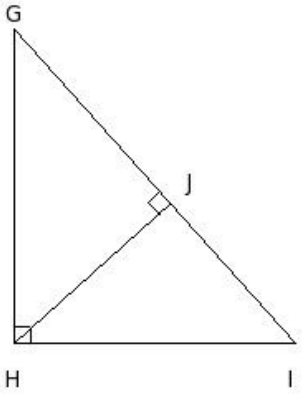
a) $GH^2 = GI \cdot GJ$

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

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

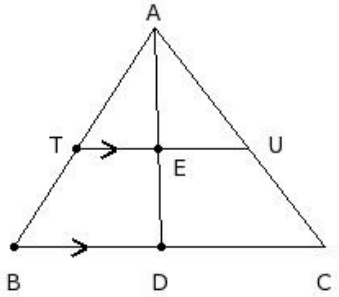
d) $HJ^2 = GJ \cdot JI$

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



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

14. In the given figure, TU ∥ BC , and median AD bisects TU.
If AD = 13.4 cm, AC = 17 cm and AE = 7.44 cm, AU =



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

15. 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?

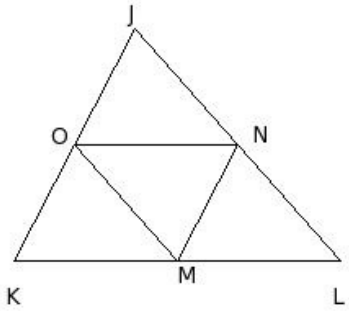
a) Area of trapezium KLNO is thrice the area of △JON

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

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

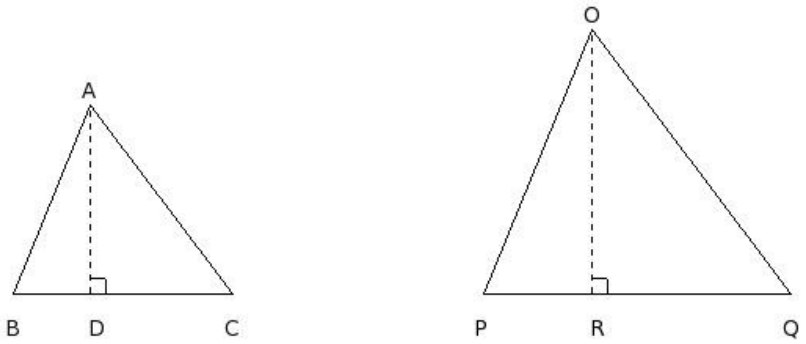
d) Area of △JKL = 4 times area of △MNO

e) All four small triangles have equal areas



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

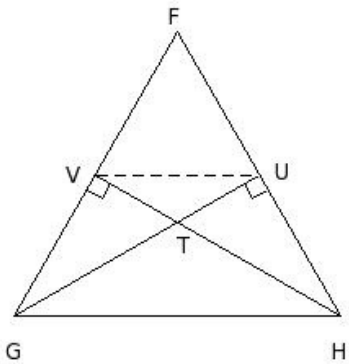
16. In the given figure, △ABC & △OPQ are similar triangles. If the ratio of the heights AD : OR = 12 : 17, then the ratio of their areas is



(i) $144\,sq.cm : 289\,sq.cm$ (ii) $145\,sq.cm : 289\,sq.cm$ (iii) $144\,sq.cm : 291\,sq.cm$ (iv) $144\,sq.cm : 286\,sq.cm$

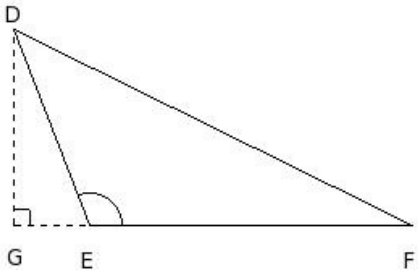
(v) $143\,sq.cm : 289\,sq.cm$

17. In the given figure, the altitudes UG and HV of △FGH meet at T. △UHT ~



(i) △VGT (ii) △TGH (iii) △VGH (iv) △UHG (v) △TVU

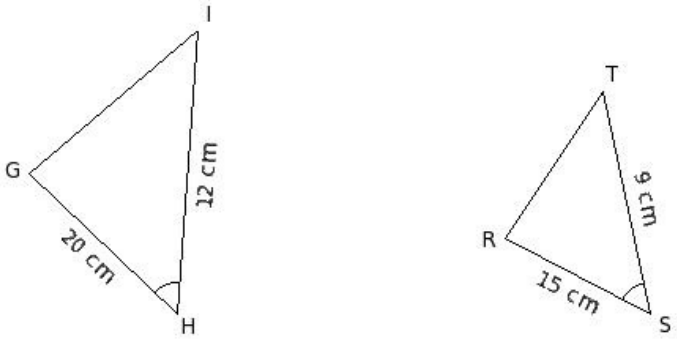
18. In the given figure, △DEF is an obtuse angled triangle and DG ⊥ EF. Then



(i) $DF^2 = DE^2 + EF^2 + 2DE.EF$ (ii) $DF^2 = DE^2 + EF^2 - 2EF.EG$ (iii) $DF^2 = DE^2 + EF^2 + 2EF.EG$

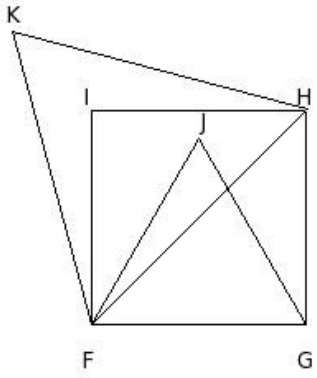
(iv) $DF^2 = DE^2 + EF^2 + 2EG.FG$ (v) $DF^2 = DE^2 + EF^2 + EG^2$

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



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

20. FGHI is a square and △FGJ is an equilateral triangle. Also, △FHK is an equilateral triangle. If area of △FGJ is 'a' sq.units, then the area of △FHK is



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

21. In the given figure, HIJK is a rhombus. Which of the following are true?

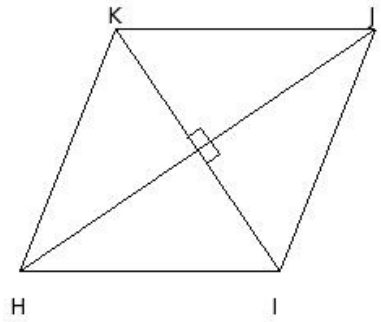
a) $4\,HI^2 = HJ^2 + IK^2$

b) $IJ^2 + JK^2 = IK^2$

c) $2\,HI^2 = HJ^2 + IK^2$

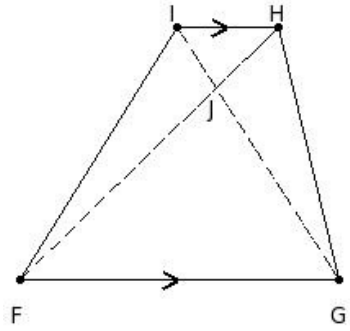
d) $HI^2 + IJ^2 = HJ^2$

e) $HI^2 + IJ^2 + JK^2 + HK^2 = HJ^2 + IK^2$



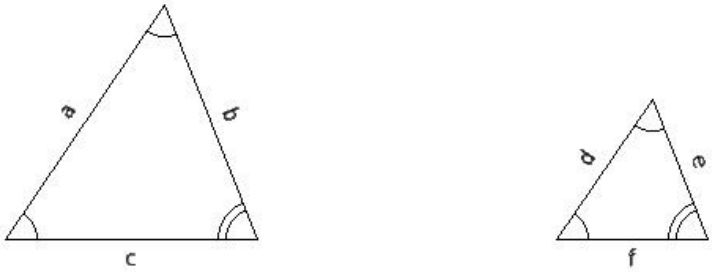
(i) {a,e} (ii) {b,a} (iii) {d,b,a} (iv) {c,e} (v) {c,e,a}

22. In the given figure, FGHI is a trapezium in which FG ∥ HI and the diagonals GI and FH intersect at J. If $JF = (x+13)$ cm, $GJ = (2x+6)$ cm, $JH = (x+3)$ cm and $IJ = (x+18)$ cm, find the value of x



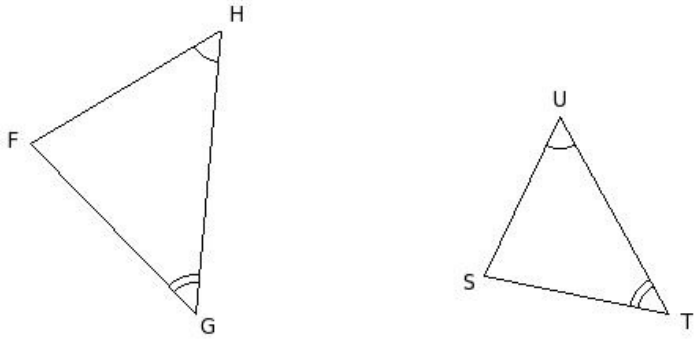
(i) (-8,26) (ii) (-7,28) (iii) (-8,27) (iv) (-6,27) (v) (29,-6)

23. In the given two similar triangles, if a = 18 cm, b = 16 cm, c = 16 cm, f = 9.6 cm, find d



(i) 10.80 cm (ii) 12.80 cm (iii) 8.80 cm (iv) 9.80 cm (v) 11.80 cm

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



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

25. In an equilateral triangle ABC, the side BC is trisected at D. Then

(i) $7\ AD^2 = 9\ AB^2$ (ii) $3\ AD^2 = 7\ AB^2$ (iii) $7\ AD^2 = 3\ AB^2$ (iv) $9\ AD^2 = 7\ AB^2$

Assignment Key

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