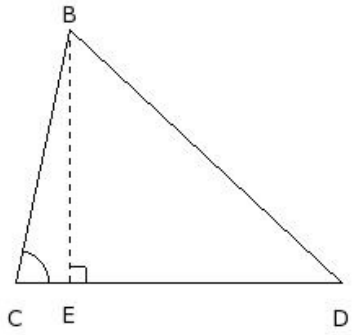
EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Triangles

Grade : CBSE Grade X

1. In the given figure, △BCD is an acute angled triangle and BE ⊥ CD. Then



(i) $BD^2 = BC^2 + CD^2 - 2BC.CD$ (ii) $BD^2 = BC^2 + CD^2 + 2BC.CD$ (iii) $BD^2 = BC^2 + CD^2 - 2CD.CE$

(iv) $BD^2 = BC^2 + CD^2 + 2CD.CE$ (v) $BD^2 = BC^2 + CD^2 - BE^2$

2. The ratio of the bases of two triangles ABC and DEF is $4:6$.
If the triangles are equal in area, then the ratio of their heights is

(i) $4:4$ (ii) $6:4$ (iii) $5:6$ (iv) $3:6$ (v) $4:9$

3. Which of the following are necessary conditions for similarity of two polygons ?

a) The corresponding angles are proportional.
b) The corresponding sides are proportional.
c) The corresponding sides are equal.
d) The corresponding angles are equal.

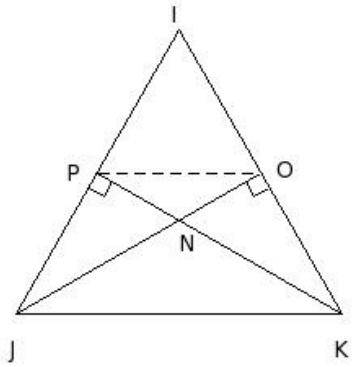
(i) {a,c,b} (ii) {a,b} (iii) {a,d,b} (iv) {b,d} (v) {c,d}

4. Which of the following are true?

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

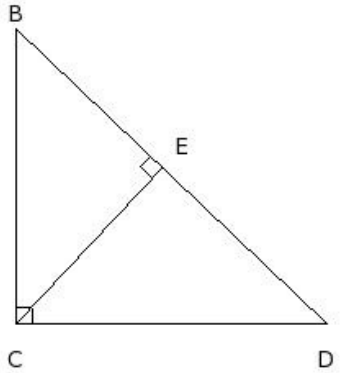
(i) {b,e} (ii) {d,a,c} (iii) {a,c} (iv) {b,e,c} (v) {c,e}

5. In the given figure, the altitudes OJ and KP of △IJK meet at N. △PJN ~



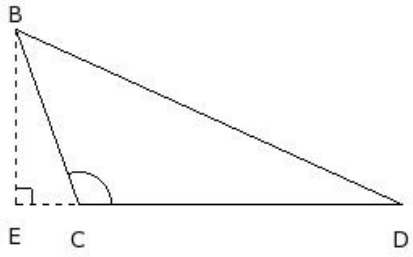
(i) △OKN (ii) △NPO (iii) △OKJ (iv) △PJK (v) △NJK

6. In the given figure, △BCD is right-angled at C. Also, CE ⊥ BD. If CD = 19 cm, CE = 13.07 cm, then find BC.



(i) 19.00 cm (ii) 16.00 cm (iii) 18.00 cm (iv) 17.00 cm (v) 20.00 cm

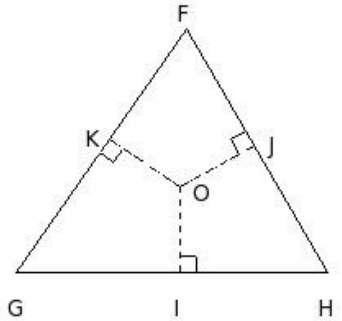
7. In the given figure, △BCD is an obtuse angled triangle and BE ⊥ CD. Then



(i) $BD^2 = BC^2 + CD^2 + 2CD.CE$ (ii) $BD^2 = BC^2 + CD^2 + 2BC.CD$ (iii) $BD^2 = BC^2 + CD^2 + 2CE.DE$

(iv) $BD^2 = BC^2 + CD^2 - 2CD.CE$ (v) $BD^2 = BC^2 + CD^2 + CE^2$

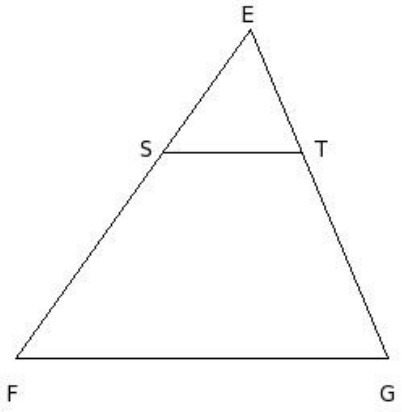
8. In the given figure, in △FGH, 'O' is a point inside the triangle. OI ⊥ GH, OJ ⊥ FH and OK ⊥ FG. Then



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

(iii) $FK^2 + GI^2 + HJ^2 = FJ^2 + HI^2 + GK^2$ (iv) $FK^2 + GI^2 + HJ^2 = OI^2 + OJ^2 + OK^2$

9. In the given figure, ST ∥ FG and ES = 15 cm, ST = 13.8 cm and FG = 23 cm, find EF



(i) 27.0 cm (ii) 25.0 cm (iii) 24.0 cm (iv) 26.0 cm (v) 23.0 cm

10. In the given figure, △BCD, BE ⊥ CD. Which of the following are true?

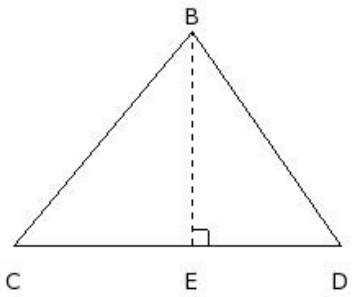
a) $BC^2 + CE^2 = BD^2 + DE^2$

b) $BC^2 + BD^2 = CE^2 + DE^2$

c) $BE^2 = 2\,CE\,.\,DE$

d) $BC^2 - BD^2 = CE^2 - DE^2$

e) $BC^2 - CE^2 = BD^2 - DE^2$



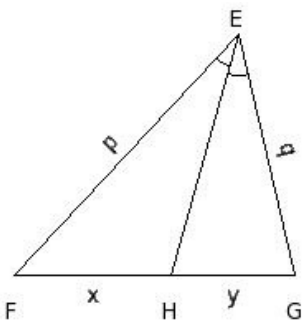
(i) {c,a,d} (ii) {a,d} (iii) {b,e} (iv) {b,e,d} (v) {d,e}

11. Which of the following are true?

a) Any two quadrilaterals are similar if the corresponding sides are proportional.
b) Any two triangles are similar if the corresponding angles are equal.
c) Any two triangles are similar if the corresponding sides are proportional.
d) Any two quadrilaterals are similar if the corresponding angles are equal.

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

12. In the given figure, given ∠HEF = ∠GEH, x : y = 9.71 cm : 7.29 cm and p = 20 cm, find q =

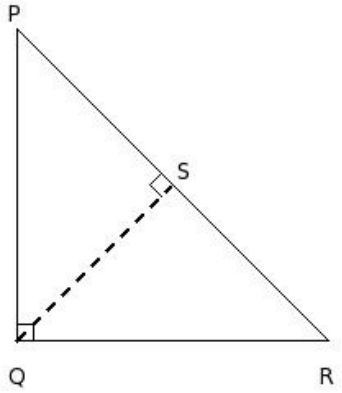


(i) 17.00 cm (ii) 16.00 cm (iii) 14.00 cm (iv) 15.00 cm (v) 13.00 cm

13. The perimeters of two similar triangles are 34 cm and 18 cm respectively. If one side of the first triangle is 13 cm, find the length of the corresponding side of the second triangle.

(i) 7.88 cm (ii) 8.88 cm (iii) 6.88 cm (iv) 4.88 cm (v) 5.88 cm

14. In the given figure, △PQR is isosceles right-angled at Q and QS ⊥ RP. ∠PQR =



(i) ∠PQS (ii) ∠QRS (iii) ∠RSQ (iv) ∠SPQ (v) ∠SQR

15. In the given figure, DEFG is a rhombus. Which of the following are true?

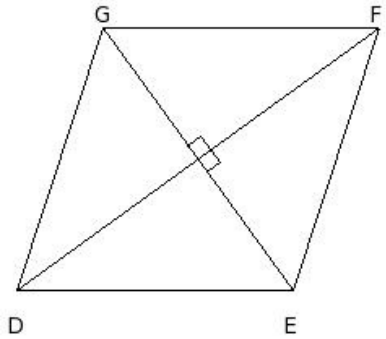
a) $DE^2 + EF^2 = DF^2$

b) $DE^2 + EF^2 + FG^2 + DG^2 = DF^2 + EG^2$

c) $2\,DE^2 = DF^2 + EG^2$

d) $EF^2 + FG^2 = EG^2$

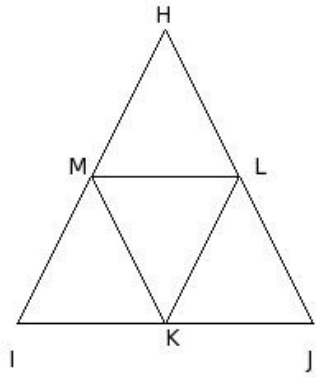
e) $4\,DE^2 = DF^2 + EG^2$



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

16. In the given figure, points K , L and M are the mid-points of sides IJ, JH and HI of △HIJ. Which of the following are true?

a) △MIK ~ △HIJ
b) △KLM ~ △HIJ
c) △KML ~ △HIJ
d) △HML ~ △HIJ
e) △LKJ ~ △HIJ



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

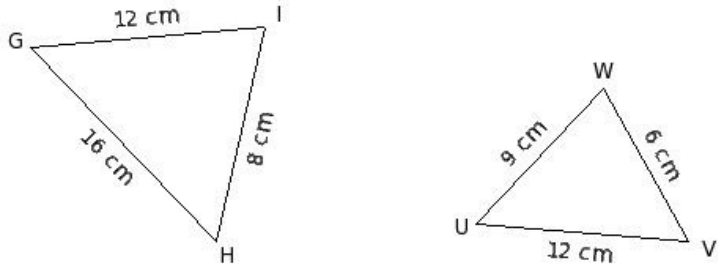
17. In an equilateral triangle ABC, the side BC is trisected at D. Then

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

18. Two poles of heights 7 m and 14 m stand vertically on a plane ground. If the distance between their feet is 15 m, find the distance between their tops

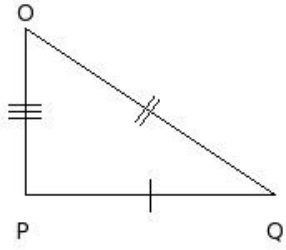
(i) 14.55 m (ii) 17.55 m (iii) 15.55 m (iv) 16.55 m (v) 18.55 m

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



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

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

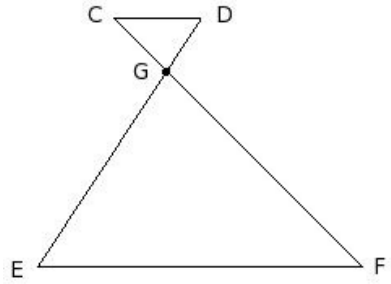


(i) OP = 10 cm , PQ = 15 cm , QO = 18.03 cm (ii) OP = 15 cm , PQ = 14 cm , QO = 13 cm

(iii) OP = 14 cm , PQ = 11 cm , QO = 13 cm (iv) OP = 15 cm , PQ = 25 cm , QO = 14 cm

(v) OP = 10 cm , PQ = 10 cm , QO = 10 cm

21. In the given figure, if CD ∥ EF then



(i) △GDC ~ △GFE (ii) △GCD ~ △GEF (iii) △CDG ~ △GFE (iv) △CDG ~ △FEG (v) △CDG ~ △GEF

22. In the given figure, △CDE is right-angled at D. Also, DF ⊥ CE. Which of the following are true?

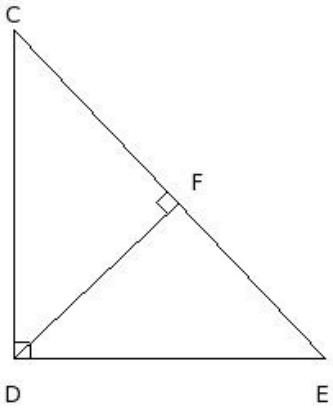
a) $DE^2 = EC \cdot EF$

b) $CD^2 = CE \cdot CF$

c) $CD^2 = EC \cdot EF$

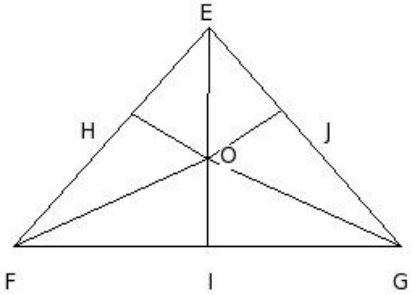
d) $DF^2 = CF \cdot FE$

e) $DE^2 = CE \cdot CF$



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

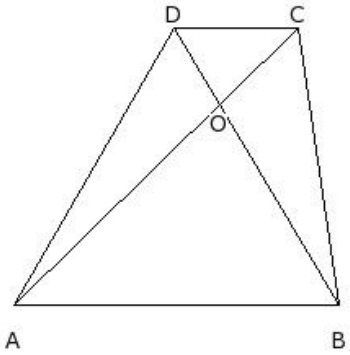
23. In the given figure, EFG is a triangle and 'O' is a point inside △EFG. The angular bisector of ∠FOE, ∠GOF & ∠EOG meet EF, FG & GE at H, I & J respectively . Then



(i) EH . FI . GJ = OH . OI . OJ (ii) EH . FI . GJ = HI . IJ . JH (iii) EH . FI . GJ = EF . FG . GE

(iv) EH . FI . GJ = HF . IG . JE (v) EH . FI . GJ = OE . OF . OG

24. In the given figure, ABCD is a trapezium where OA = 15 cm , OC = 5 cm and OD = 5 cm . Find OB =



(i) 13 cm (ii) 17 cm (iii) 15 cm (iv) 16 cm (v) 14 cm

25. Which of the following are true?

a) If two figures are similar, then they are congruent too.
b) Similar figures have same area.
c) Congruent figures have same area.
d) If two figures are congruent, then they are similar too.
e) Similar and congruent are not synonymous.

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

Assignment Key

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