EduSahara™ Assignment

Name : Pythagoras Theorem

Chapter : Triangles

Grade : CBSE Grade X

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

   (i) MN = 13 cm , NO = 23 cm , OM = 15 cm (ii) MN = 15 cm , NO = 15 cm , OM = 15 cm

   (iii) MN = 10 cm , NO = 11 cm , OM = 13 cm (iv) MN = 12 cm , NO = 15 cm , OM = 19.21 cm

   (v) MN = 10 cm , NO = 12 cm , OM = 12 cm

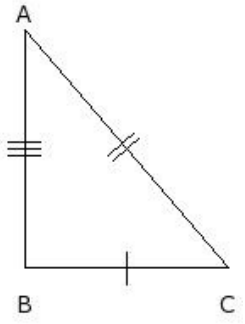
2. Which of the following are measures of an isosceles right angled triangle ?

   (i) BC = 10 cm , CD = 13 cm , DB = 12 cm (ii) BC = 15 cm , CD = 15 cm , DB = 15 cm

   (iii) BC = 13 cm , CD = 13 cm , DB = 18.38 cm (iv) BC = 14 cm , CD = 20 cm , DB = 13 cm

   (v) BC = 15 cm , CD = 10 cm , DB = 13 cm

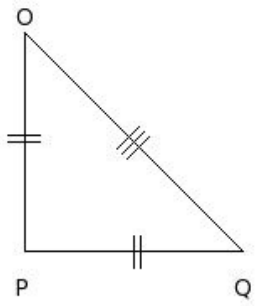
3. Which of the following are measures of a right angled triangle ?



   (i) AB = 15 cm , BC = 15 cm , CA = 15 cm (ii) AB = 12 cm , BC = 18 cm , CA = 12 cm

   (iii) AB = 15 cm , BC = 12 cm , CA = 14 cm (iv) AB = 14 cm , BC = 12 cm , CA = 18.44 cm

4. Which of the following are measures of an isosceles right angled triangle ?



   (i) OP = 10 cm , PQ = 10 cm , QO = 10 cm (ii) OP = 13 cm , PQ = 20 cm , QO = 10 cm

   (iii) OP = 13 cm , PQ = 15 cm , QO = 10 cm (iv) OP = 13 cm , PQ = 13 cm , QO = 18.38 cm

5. In a right angled triangle, if one of the sides is 16 cm and hypotenuse 65 cm, find the third side

   (i) 64.00 cm (ii) 63.00 cm (iii) 62.00 cm (iv) 61.00 cm (v) 65.00 cm

6. In a right angled triangle, if the two non-hypotenuse sides are 16 cm and 63 cm, find the hypotenuse

   (i) 65.00 cm (ii) 66.00 cm (iii) 64.00 cm (iv) 67.00 cm (v) 63.00 cm

7. In the given figure, △FGH is right-angled at G. Also, GI ⊥ FH. Which of the following are true?

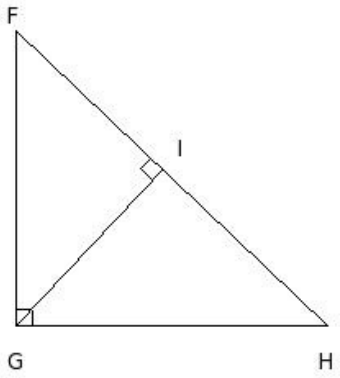
a) $GH^2 = HF \cdot HI$

b) $FG^2 = FH \cdot FI$

c) $FG^2 = HF \cdot HI$

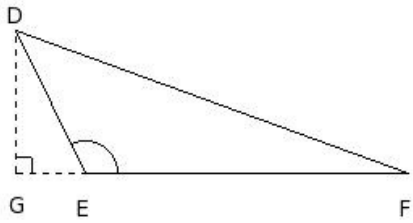
d) $GH^2 = FH \cdot FI$

e) $GI^2 = FI \cdot IH$



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

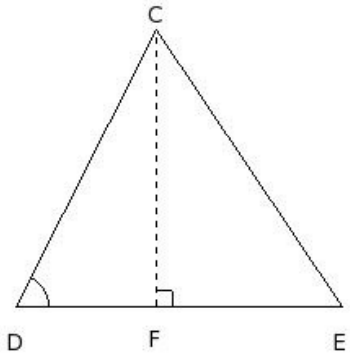
8. In the given figure, △DEF is an obtuse angled triangle and DG ⊥ EF. Then



(i) $DF^2 = DE^2 + EF^2 - 2EF \cdot EG$ (ii) $DF^2 = DE^2 + EF^2 + 2DE \cdot EF$ (iii) $DF^2 = DE^2 + EF^2 + 2EG \cdot FG$

(iv) $DF^2 = DE^2 + EF^2 + 2EF \cdot EG$ (v) $DF^2 = DE^2 + EF^2 + EG^2$

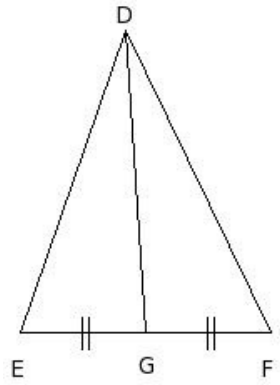
9. In the given figure, △CDE is an acute angled triangle and CF ⊥ DE. Then



(i) $CE^2 = CD^2 + DE^2 - CF^2$ (ii) $CE^2 = CD^2 + DE^2 + 2CD \cdot DE$ (iii) $CE^2 = CD^2 + DE^2 + 2DE \cdot DF$

(iv) $CE^2 = CD^2 + DE^2 - 2CD \cdot DE$ (v) $CE^2 = CD^2 + DE^2 - 2DE \cdot DF$

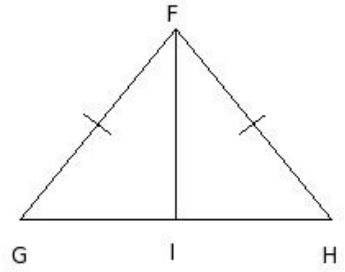
10. In the given figure, △DEF is a triangle with DG being the median of EF. Then



(i) $DE^2 + DF^2 = 2\,EG^2 + 2\,GF^2$ (ii) $DE^2 + DF^2 = 2\,GF^2 + 2\,DG^2$ (iii) $DE^2 + DF^2 = 2\,EG^2 + 2\,DG^2$

(iv) $DE^2 + DF^2 = DG^2$ (v) $DE^2 + DF^2 = EF^2$

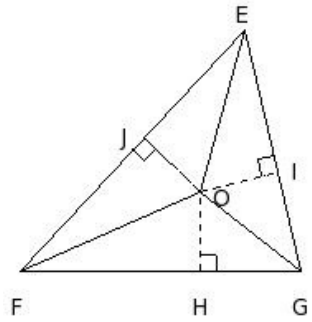
11. In the given figure, △FGH is a triangle in which FG = FH and I is a point on GH. Then



(i) $FG^2 - FI^2 = FI.GI$ (ii) $FG^2 - FI^2 = FI.HI$ (iii) $FG^2 + FI^2 = GI.HI$ (iv) $FG^2 - FI^2 = GI.HI$

(v) $FG^2 + FI^2 = GH^2$

12. In the given figure, in △EFG, 'O' is a point inside the triangle. OH ⊥ FG, OI ⊥ EG and OJ ⊥ EF. Then

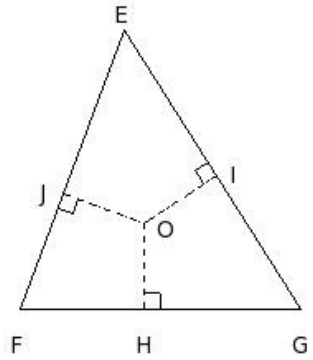


(i) $EJ^2 + FH^2 + GI^2 = OE^2 + OF^2 + OG^2 + OH^2 + OI^2 + OJ^2$

(ii) $EJ^2 + FH^2 + GI^2 = OE^2 + OF^2 + OG^2 - OH^2 - OI^2 - OJ^2$ (iii) $EJ^2 + FH^2 + GI^2 = OJ^2 + OI^2 + OH^2$

(iv) $EJ^2 + FH^2 + GI^2 = EF^2 + HG^2 + GE^2 - FJ^2 - GH^2 - IE^2$

13. In the given figure, in △EFG, 'O' is a point inside the triangle. OH ⊥ FG, OI ⊥ EG and OJ ⊥ EF. Then



(i) $EJ^2 + FH^2 + GI^2 = EI^2 + GH^2 + FJ^2$ (ii) $EJ^2 + FH^2 + GI^2 = OE.OF + OF.OG + OG.OE$

(iii) $EJ^2 + FH^2 + GI^2 = OH^2 + OI^2 + OJ^2$ (iv) $EJ^2 + FH^2 + GI^2 = OJ.OH + OH.OI + OI.OJ$

14. In the given figure, △CED is right-angled at E. P is the mid-point of CE and Q is the mid-point of DE. Which of the following cases are true?

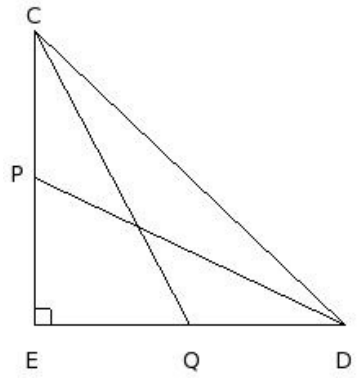
a) $4\,CQ^2 = 4\,DE^2 + CE^2$

b) $4\,DP^2 = 4\,CE^2 + DE^2$

c) $4\,(CQ^2 + DP^2) = 5\,CD^2$

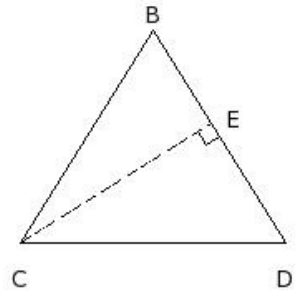
d) $4\,DP^2 = 4\,DE^2 + CE^2$

e) $4\,CQ^2 = 4\,CE^2 + DE^2$



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

15. In the given figure, △BCD is isosceles with BC = BD and CE ⊥ BD. Then



(i) $CE^2 - BE^2 = 2\,DE.BE$ (ii) $CE^2 + DE^2 = 2\,DE.BE$ (iii) $CE^2 + BE^2 = 2\,DE.BE$ (iv) $CE^2 - DE^2 = 2\,DE.BE$

16. In the given figure, GHIJ is a rhombus. Which of the following are true?

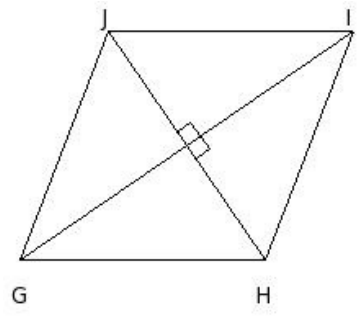
a) $HI^2 + IJ^2 = HJ^2$

b) $GH^2 + HI^2 = GI^2$

c) $2\,GH^2 = GI^2 + HJ^2$

d) $4\,GH^2 = GI^2 + HJ^2$

e) $GH^2 + HI^2 + IJ^2 + GJ^2 = GI^2 + HJ^2$



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

17. In the given figure, $\triangle GHI$, $GJ \perp HI$. Which of the following are true?

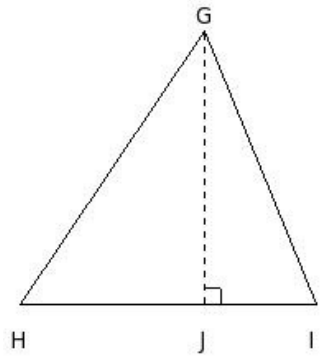
a) $GH^2 - GI^2 = HJ^2 - IJ^2$

b) $GH^2 + HJ^2 = GI^2 + IJ^2$

c) $GH^2 - HJ^2 = GI^2 - IJ^2$

d) $GJ^2 = 2\,HJ.IJ$

e) $GH^2 + GI^2 = HJ^2 + IJ^2$

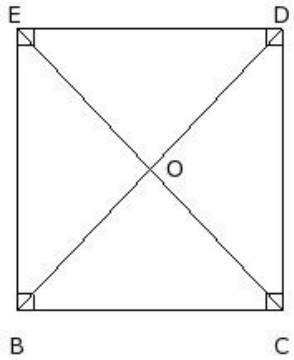


(i) {b,a} (ii) {d,c,a} (iii) {a,c} (iv) {e,b,a} (v) {d,c}

18. The altitude and area of an equilateral triangle of side 'a' is

(i) $\frac{1}{2}\sqrt{3}\,a, \frac{1}{4}\sqrt{3}\,a^2$ (ii) $\sqrt{3}\,a, \frac{1}{2}\sqrt{3}\,a$ (iii) $\frac{1}{2}\sqrt{3}\,a, \frac{1}{2}\sqrt{3}\,a^2$ (iv) $\sqrt{3}\,a, \frac{1}{2}\sqrt{3}\,a^2$

19. 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) $OB^2 - OD^2 = OC^2 - OE^2$

(iii) $OB^2 + OC^2 + OD^2 + OE^2 = BC^2 + CD^2 + DE^2 + EB^2$ (iv) $OB^2 + OC^2 + OD^2 + OE^2 = BD^2 + CE^2$

20. In the given figure, $\triangle CDE$, F is the mid-point of DE and $CG \perp DE$. Which of the following are true?

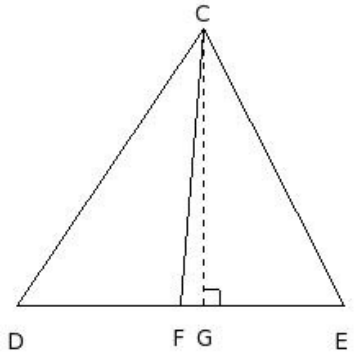
a) $CE^2 = CF^2 + DE.FG + \frac{1}{4} DE^2$

b) $CD^2 + CE^2 = 2\,CF^2 + \frac{1}{2} DE^2$

c) $CE^2 = CG^2 + DE.FG + \frac{1}{4} DE^2$

d) $CD^2 = CG^2 - DE.FG + \frac{1}{4} DE^2$

e) $CD^2 = CF^2 - DE.FG + \frac{1}{4} DE^2$



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

21. In the given figure, △CED is right-angled at E, EF ⊥ CD.
$CD = c, ED = a, CE = b$ and $EF = p$. Which of the following are true?

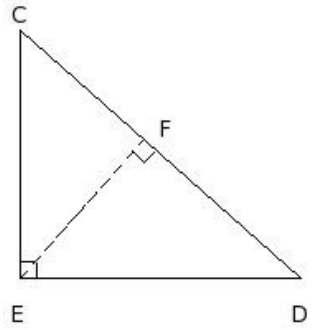
a) $ab = pc$

b) $a^2 + b^2 = c^2$

c) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{c^2} + \frac{1}{p^2}$

d) $\frac{1}{a^2} + \frac{1}{b^2} + \frac{1}{c^2} = \frac{1}{p^2}$

e) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{p^2}$

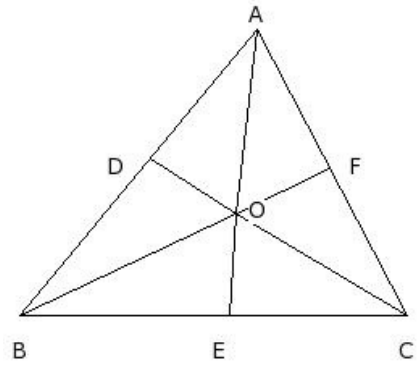


(i) {c,d,e} (ii) {d,b} (iii) {a,b,e} (iv) {c,a} (v) {c,a,b}

22. 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) $9\ AD^2 = 7\ AB^2$

23. In the given figure, ABC is a triangle and 'O' is a point inside △ABC. The angular bisector of ∠BOA, ∠COB & ∠AOC meet AB, BC & CA at D, E & F respectively . Then



(i) AD . BE . CF = DE . EF . FD (ii) AD . BE . CF = AB . BC . CA (iii) AD . BE . CF = OA . OB . OC

(iv) AD . BE . CF = DB . EC . FA (v) AD . BE . CF = OD . OE . OF

24. A vehicle goes 10 km East and then 11 km South. How far is it from its starting point ?

(i) 13.87 km (ii) 15.87 km (iii) 16.87 km (iv) 14.87 km (v) 12.87 km

25. The foot of a ladder resting on a wall from the foot of the wall is 11 m. If the height of the top of the ladder from ground is 15 m, find the length of the ladder

(i) 19.60 m (ii) 17.60 m (iii) 20.60 m (iv) 18.60 m (v) 16.60 m

26. Two poles of heights 8 m and 14 m stand vertically on a plane ground. If the distance between their feet is 12 m, find the distance between their tops

(i) 13.42 m (ii) 11.42 m (iii) 14.42 m (iv) 15.42 m (v) 12.42 m

27. A ladder reaches a window which is 10 m above the ground on one side of a street. Keeping its foot at the same point, the ladder is turned to the other side of the street to reach a window 14 m high. Find the width of the street if the length of the ladder is 18 m

(i) 27.28 m (ii) 25.28 m (iii) 28.28 m (iv) 26.28 m (v) 24.28 m

Assignment Key

1) (iv)	2) (iii)	3) (iv)	4) (iv)	5) (ii)	6) (i)
7) (v)	8) (iv)	9) (v)	10) (iii)	11) (iv)	12) (ii)
13) (i)	14) (iii)	15) (iv)	16) (i)	17) (iii)	18) (i)
19) (i)	20) (v)	21) (iii)	22) (iv)	23) (iv)	24) (iv)
25) (iv)	26) (i)	27) (iv)			