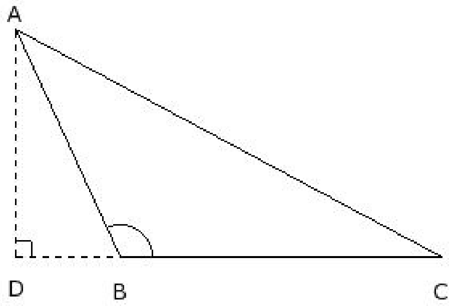
EduSahara™ Assignment

Name : Pythagoras Theorem

Chapter : Triangles

Grade : ICSE Grade VIII

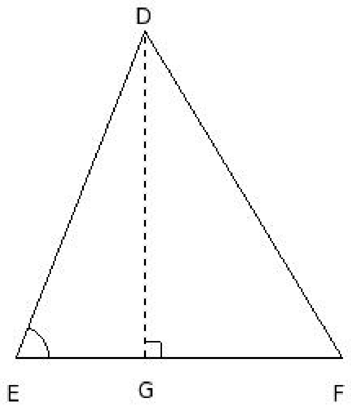
1. In the given figure, $\triangle ABC$ is an obtuse angled triangle and $AD \perp BC$. Then



(i) $AC^2 = AB^2 + BC^2 + 2AB.BC$ (ii) $AC^2 = AB^2 + BC^2 + 2BC.BD$ (iii) $AC^2 = AB^2 + BC^2 - 2BC.BD$

(iv) $AC^2 = AB^2 + BC^2 + BD^2$ (v) $AC^2 = AB^2 + BC^2 + 2BD.CD$

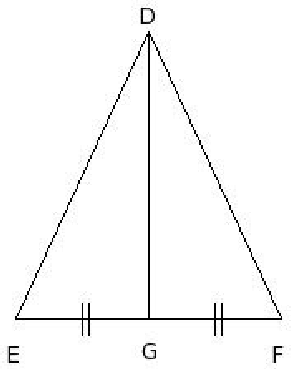
2. In the given figure, $\triangle DEF$ is an acute angled triangle and $DG \perp EF$. Then



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

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

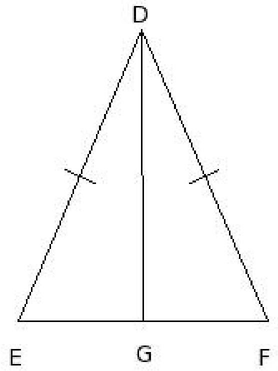
3. In the given figure, $\triangle DEF$ is a triangle with DG being the median of EF. Then



(i) $DE^2 + DF^2 = 2GF^2 + 2DG^2$ (ii) $DE^2 + DF^2 = DG^2$ (iii) $DE^2 + DF^2 = 2EG^2 + 2GF^2$ (iv) $DE^2 + DF^2 = EF^2$

(v) $DE^2 + DF^2 = 2EG^2 + 2DG^2$

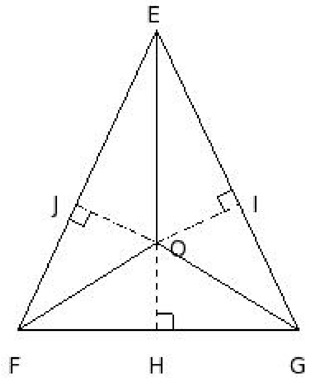
4. In the given figure, $\triangle DEF$ is a triangle in which DE = DF and G is a point on EF. Then



(i) $DE^2 + DG^2 = EF^2$ (ii) $DE^2 - DG^2 = DG.EG$ (iii) $DE^2 - DG^2 = DG.FG$ (iv) $DE^2 + DG^2 = EG.FG$

(v) $DE^2 - DG^2 = EG.FG$

5. In the given figure, in $\triangle EFG$, 'O' is a point inside the triangle. $OH \perp FG$, $OI \perp EG$ and $OJ \perp EF$. Then

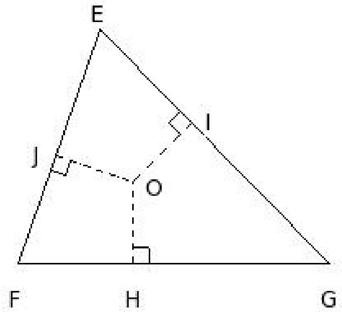


(i) $EJ^2 + FH^2 + GI^2 = OJ^2 + OI^2 + OH^2$ (ii) $EJ^2 + FH^2 + GI^2 = OE^2 + OF^2 + OG^2 - OH^2 - OI^2 - OJ^2$

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

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

6. In the given figure, in $\triangle EFG$, 'O' is a point inside the triangle. $OH \perp FG$, $OI \perp EG$ and $OJ \perp EF$. Then



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

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

7. In the given figure, $\triangle DFE$ is right-angled at F. S is the mid-point of DF and T is the mid-point of EF. Which of the following cases are true?

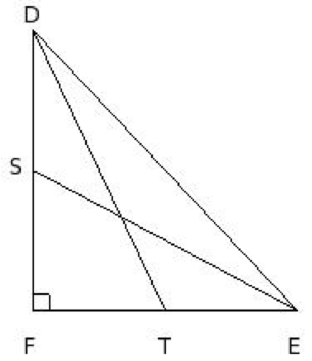
a) $4\,DT^2 = 4\,EF^2 + DF^2$

b) $4\,(DT^2 + ES^2) = 5\,DE^2$

c) $4\,ES^2 = 4\,EF^2 + DF^2$

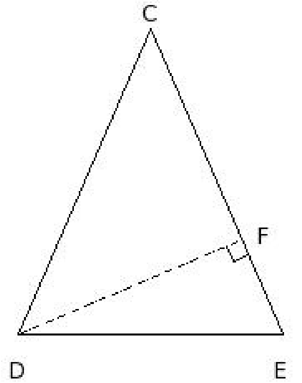
d) $4\,ES^2 = 4\,DF^2 + EF^2$

e) $4\,DT^2 = 4\,DF^2 + EF^2$



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

8. In the given figure, $\triangle CDE$ is isosceles with CD = CE and DF ⊥ CE. Then



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

9. In the given figure, FGHI is a rhombus. Which of the following are true?

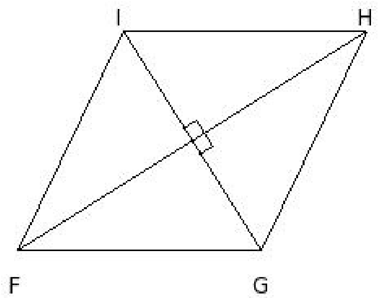
a) $4\,FG^2 = FH^2 + GI^2$

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

c) $FG^2 + GH^2 + HI^2 + FI^2 = FH^2 + GI^2$

d) $FG^2 + GH^2 = FH^2$

e) $2\,FG^2 = FH^2 + GI^2$



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

10. In the given figure, $\triangle EFG$, $EH \perp FG$. Which of the following are true?

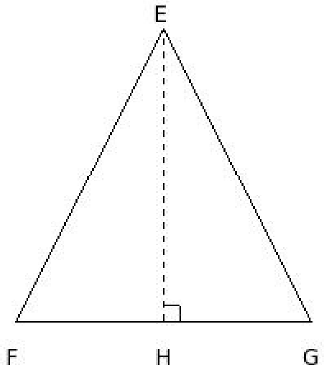
a) $EF^2 - FH^2 = EG^2 - GH^2$

b) $EF^2 - EG^2 = FH^2 - GH^2$

c) $EH^2 = 2FH.GH$

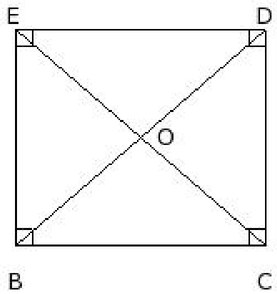
d) $EF^2 + FH^2 = EG^2 + GH^2$

e) $EF^2 + EG^2 = FH^2 + GH^2$



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

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



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

(iii) $OB^2 + OD^2 = OC^2 + OE^2$ (iv) $OB^2 - OD^2 = OC^2 - OE^2$

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

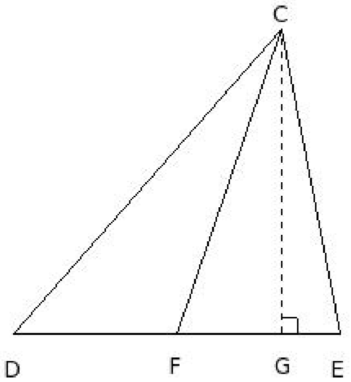
a) $CE^2 = CG^2 + DE.FG + \frac{1}{4} DE^2$

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

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

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

13. In the given figure, $\triangle BDC$ is right-angled at D, $DE \perp BC$.
$BC = c, DC = a, BD = b$ and $DE = p$. Which of the following are true?

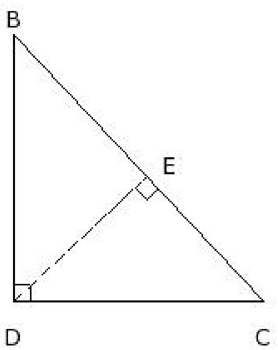
a) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{c^2} + \frac{1}{p^2}$

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

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

d) $ab = pc$

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



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

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

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

15. A vehicle goes 11 km West and then 12 km North. How far is it from its starting point ?

(i) 14.28 km (ii) 18.28 km (iii) 16.28 km (iv) 15.28 km (v) 17.28 km

16. 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 14 m, find the length of the ladder

(i) 15.80 m (ii) 19.80 m (iii) 16.80 m (iv) 18.80 m (v) 17.80 m

17. Two poles of heights 7 m and 13 m stand vertically on a plane ground. If the distance between their feet is 13 m, find the distance between their tops

(i) 16.32 m (ii) 12.32 m (iii) 14.32 m (iv) 15.32 m (v) 13.32 m

18. A ladder reaches a window which is 8 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 19 m

(i) 29.08 m (ii) 30.08 m (iii) 31.08 m (iv) 32.08 m (v) 28.08 m

Assignment Key

1) (ii)	2) (v)	3) (v)	4) (v)	5) (ii)	6) (ii)
7) (ii)	8) (ii)	9) (i)	10) (iv)	11) (iii)	12) (ii)
13) (i)	14) (iii)	15) (iii)	16) (v)	17) (iii)	18) (ii)