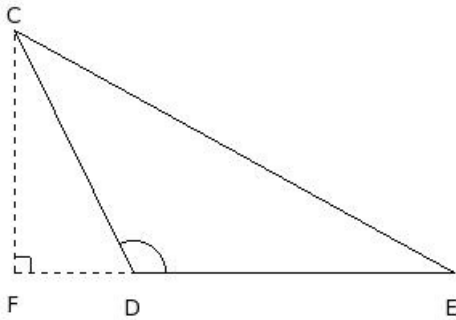


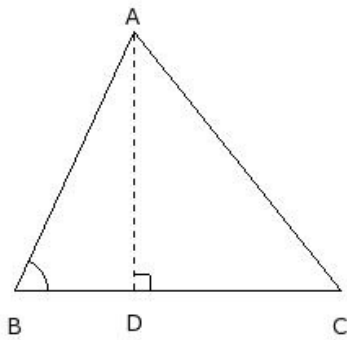


1. In the given figure,  $\triangle CDE$  is an obtuse angled triangle and  $CF \perp DE$ . Then



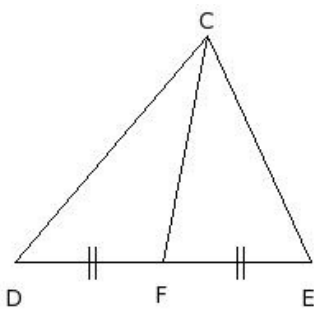
- (i)  $CE^2 = CD^2 + DE^2 + 2DF \cdot EF$  (ii)  $CE^2 = CD^2 + DE^2 + 2CD \cdot DE$  (iii)  $CE^2 = CD^2 + DE^2 + DF^2$
- (iv)  $CE^2 = CD^2 + DE^2 - 2DE \cdot DF$  (v)  $CE^2 = CD^2 + DE^2 + 2DE \cdot DF$

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



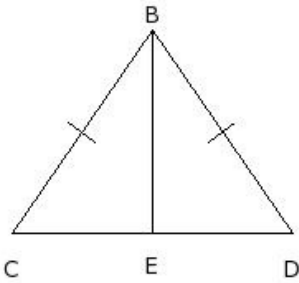
- (i)  $AC^2 = AB^2 + BC^2 + 2AB \cdot BC$  (ii)  $AC^2 = AB^2 + BC^2 - 2AB \cdot BC$  (iii)  $AC^2 = AB^2 + BC^2 + 2BC \cdot BD$
- (iv)  $AC^2 = AB^2 + BC^2 - 2BC \cdot BD$  (v)  $AC^2 = AB^2 + BC^2 - AD^2$

3. In the given figure,  $\triangle CDE$  is a triangle with  $CF$  being the median of  $DE$ . Then



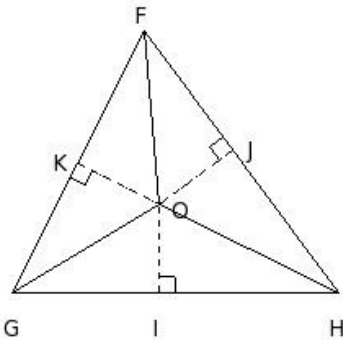
- (i)  $CD^2 + CE^2 = 2DF^2 + 2FE^2$  (ii)  $CD^2 + CE^2 = 2FE^2 + 2CF^2$  (iii)  $CD^2 + CE^2 = 2DF^2 + 2CF^2$
- (iv)  $CD^2 + CE^2 = CF^2$  (v)  $CD^2 + CE^2 = DE^2$

4. In the given figure,  $\triangle BCD$  is a triangle in which  $BC = BD$  and  $E$  is a point on  $CD$ . Then



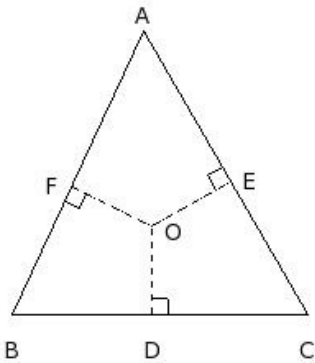
- (i)  $BC^2 - BE^2 = BE \cdot DE$  (ii)  $BC^2 + BE^2 = CE \cdot DE$  (iii)  $BC^2 - BE^2 = CE \cdot DE$  (iv)  $BC^2 - BE^2 = BE \cdot CE$   
 (v)  $BC^2 + BE^2 = CD^2$

5. In the given figure, in  $\triangle FGH$ , 'O' is a point inside the triangle.  $OI \perp GH$ ,  $OJ \perp FH$  and  $OK \perp FG$ . Then



- (i)  $FK^2 + GI^2 + HJ^2 = OK^2 + OJ^2 + OI^2$  (ii)  $FK^2 + GI^2 + HJ^2 = OF^2 + OG^2 + OH^2 - OI^2 - OJ^2 - OK^2$   
 (iii)  $FK^2 + GI^2 + HJ^2 = OF^2 + OG^2 + OH^2 + OI^2 + OJ^2 + OK^2$   
 (iv)  $FK^2 + GI^2 + HJ^2 = FG^2 + IH^2 + HF^2 - GK^2 - HI^2 - JF^2$

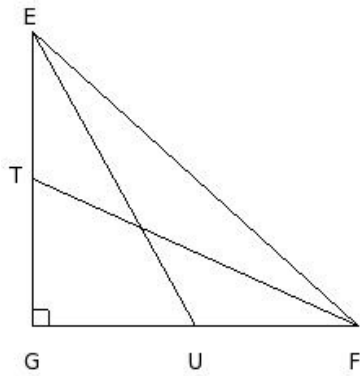
6. In the given figure, in  $\triangle ABC$ , 'O' is a point inside the triangle.  $OD \perp BC$ ,  $OE \perp AC$  and  $OF \perp AB$ . Then



- (i)  $AF^2 + BD^2 + CE^2 = OA \cdot OB + OB \cdot OC + OC \cdot OA$  (ii)  $AF^2 + BD^2 + CE^2 = OD^2 + OE^2 + OF^2$   
 (iii)  $AF^2 + BD^2 + CE^2 = OF \cdot OD + OD \cdot OE + OE \cdot OF$  (iv)  $AF^2 + BD^2 + CE^2 = AE^2 + CD^2 + BF^2$

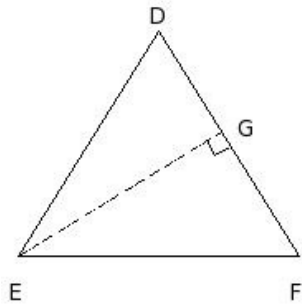
7. In the given figure,  $\triangle EGF$  is right-angled at G. T is the mid-point of EG and U is the mid-point of FG. Which of the following cases are true?

- a)  $4(EU^2 + FT^2) = 5EF^2$   
 b)  $4FT^2 = 4FG^2 + EG^2$   
 c)  $4FT^2 = 4EG^2 + FG^2$   
 d)  $4EU^2 = 4FG^2 + EG^2$   
 e)  $4EU^2 = 4EG^2 + FG^2$



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

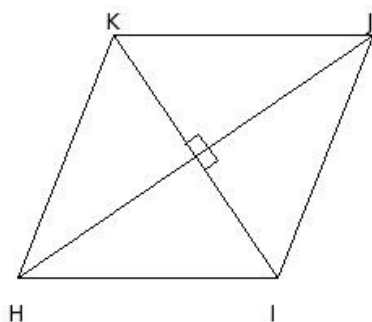
8. In the given figure,  $\triangle DEF$  is isosceles with  $DE = DF$  and  $EG \perp DF$ . Then



- (i)  $EG^2 - FG^2 = 2FG \cdot DG$  (ii)  $EG^2 + FG^2 = 2FG \cdot DG$  (iii)  $EG^2 - DG^2 = 2FG \cdot DG$  (iv)  $EG^2 + DG^2 = 2FG \cdot DG$

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

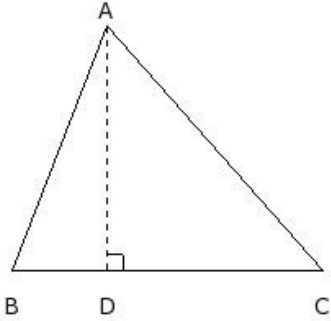
- a)  $HI^2 + IJ^2 = HJ^2$   
 b)  $4HI^2 = HJ^2 + IK^2$   
 c)  $HI^2 + IJ^2 + JK^2 + HK^2 = HJ^2 + IK^2$   
 d)  $2HI^2 = HJ^2 + IK^2$   
 e)  $IJ^2 + JK^2 = IK^2$



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

10. In the given figure,  $\triangle ABC$ ,  $AD \perp BC$ . Which of the following are true?

- a)  $AB^2 + BD^2 = AC^2 + CD^2$
- b)  $AB^2 - BD^2 = AC^2 - CD^2$
- c)  $AD^2 = 2BD \cdot CD$
- d)  $AB^2 + AC^2 = BD^2 + CD^2$
- e)  $AB^2 - AC^2 = BD^2 - CD^2$

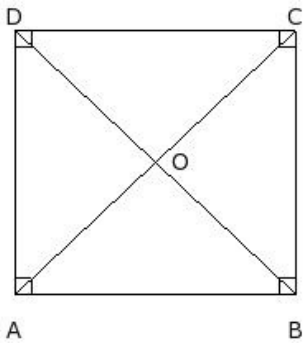


- (i) {a,b} (ii) {c,e,b} (iii) {c,e} (iv) {b,e} (v) {d,a,b}

11. 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)  $\sqrt{3}a, \frac{1}{2}\sqrt{3}a^2$  (iv)  $\frac{1}{2}\sqrt{3}a, \frac{1}{2}\sqrt{3}a^2$

12. In the given figure, O is a point in the interior of the rectangle ABCD. Then



- (i)  $OA^2 + OB^2 + OC^2 + OD^2 = AB^2 + BC^2 + CD^2 + DA^2$  (ii)  $OA^2 + OB^2 + OC^2 + OD^2 = AC^2 + BD^2$   
 (iii)  $OA^2 - OC^2 = OB^2 - OD^2$  (iv)  $OA^2 + OC^2 = OB^2 + OD^2$

13. In the given figure,  $\triangle EFG$ , H is the mid-point of FG and  $EI \perp FG$ . Which of the following are true?

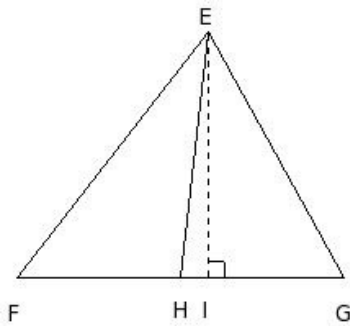
a)  $EF^2 = EH^2 - FG \cdot HI + \frac{1}{4} FG^2$

b)  $EG^2 = EH^2 + FG \cdot HI + \frac{1}{4} FG^2$

c)  $EF^2 + EG^2 = 2EH^2 + \frac{1}{2} FG^2$

d)  $EF^2 = EI^2 - FG \cdot HI + \frac{1}{4} FG^2$

e)  $EG^2 = EI^2 + FG \cdot HI + \frac{1}{4} FG^2$



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

14. 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?

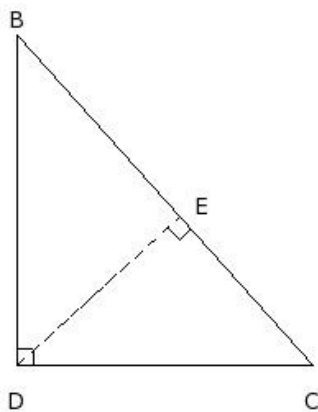
a)  $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{p^2}$

b)  $ab = pc$

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

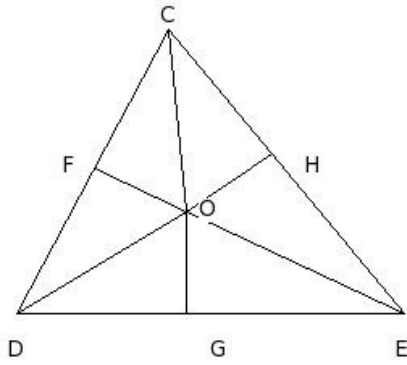


- (i) {c,a,b} (ii) {c,a} (iii) {c,d,e} (iv) {a,b,e} (v) {d,b}

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

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

16. In the given figure, CDE is a triangle and 'O' is a point inside  $\triangle CDE$ . The angular bisector of  $\angle DOC$ ,  $\angle EOD$  &  $\angle COE$  meet CD, DE & EC at F, G & H respectively . Then



- (i)  $CF \cdot DG \cdot EH = FD \cdot GE \cdot HC$  (ii)  $CF \cdot DG \cdot EH = FG \cdot GH \cdot HF$  (iii)  $CF \cdot DG \cdot EH = OC \cdot OD \cdot OE$   
 (iv)  $CF \cdot DG \cdot EH = CD \cdot DE \cdot EC$  (v)  $CF \cdot DG \cdot EH = OF \cdot OG \cdot OH$
17. A vehicle goes 11 km West and then 15 km North. How far is it from its starting point ?  
 (i) 18.60 km (ii) 16.60 km (iii) 17.60 km (iv) 19.60 km (v) 20.60 km
18. The foot of a ladder resting on a wall from the foot of the wall is 14 m. If the height of the top of the ladder from ground is 15 m, find the length of the ladder  
 (i) 20.52 m (ii) 21.52 m (iii) 19.52 m (iv) 18.52 m (v) 22.52 m
19. Two poles of heights 7 m and 14 m stand vertically on a plane ground. If the distance between their feet is 11 m, find the distance between their tops  
 (i) 13.04 m (ii) 14.04 m (iii) 12.04 m (iv) 11.04 m (v) 15.04 m
20. A ladder reaches a window which is 12 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 16 m high. Find the width of the street if the length of the ladder is 19 m  
 (i) 22.98 m (ii) 24.98 m (iii) 25.98 m (iv) 26.98 m (v) 23.98 m
21. In a right angled triangle, if one of the sides is 18 cm and hypotenuse 82 cm, find the third side  
 (i) 81.00 cm (ii) 82.00 cm (iii) 78.00 cm (iv) 80.00 cm (v) 79.00 cm
22. In a right angled triangle, if the two non-hypotenuse sides are 8 cm and 15 cm, find the hypotenuse  
 (i) 16.00 cm (ii) 19.00 cm (iii) 17.00 cm (iv) 15.00 cm (v) 18.00 cm
23. In a right angled triangle, if one of the angles is  $36.25^\circ$ , find the third angle  
 (i)  $63.75^\circ$  (ii)  $83.75^\circ$  (iii)  $53.75^\circ$  (iv)  $68.75^\circ$  (v)  $58.75^\circ$
24. In a right angled triangle, if one of the angles is  $47.49^\circ$ , find the third angle  
 (i)  $47.51^\circ$  (ii)  $42.51^\circ$  (iii)  $57.51^\circ$  (iv)  $52.51^\circ$  (v)  $72.51^\circ$

## Assignment Key

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