EduSahara™ Learning Center Assignment

Grade : Class X, CBSE
Chapter : Triangles
Name : Pythagoras Theorem

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

(i) JK = 14 cm , KL = 11 cm , LJ = 17.8 cm

(ii) JK = 13 cm , KL = 19 cm , LJ = 10 cm

(iii) JK = 10 cm , KL = 10 cm , LJ = 10 cm

(iv) JK = 13 cm , KL = 11 cm , LJ = 14 cm

(v) JK = 11 cm , KL = 13 cm , LJ = 10 cm

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

(i) NO = 14 cm , OP = 15 cm , PN = 10 cm

(ii) NO = 11 cm , OP = 15 cm , PN = 12 cm

(iii) NO = 10 cm , OP = 10 cm , PN = 10 cm

(iv) NO = 15 cm , OP = 23 cm , PN = 15 cm

(v) NO = 14 cm , OP = 14 cm , PN = 19.8 cm

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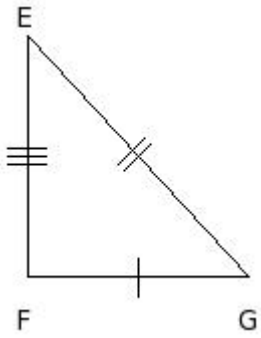
3. Which of the following are measures of a right angled triangle ?



(i) EF = 15 cm , FG = 11 cm , GE = 14 cm

(ii) EF = 14 cm , FG = 14 cm , GE = 14 cm

(iii) EF = 11 cm , FG = 16 cm , GE = 10 cm

(iv) EF = 13 cm , FG = 11 cm , GE = 14 cm

(v) EF = 12 cm , FG = 11 cm , GE = 16.28 cm

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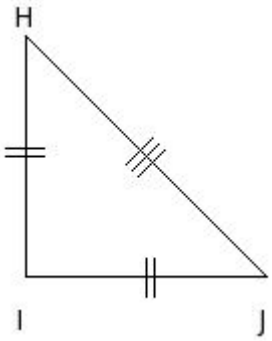
4. Which of the following are measures of an isosceles right angled triangle ?



(i) HI = 12 cm , IJ = 22 cm , JH = 13 cm

(ii) HI = 15 cm , IJ = 12 cm , JH = 14 cm

(iii) HI = 12 cm , IJ = 12 cm , JH = 16.97 cm

(iv) HI = 10 cm , IJ = 11 cm , JH = 14 cm

(v) HI = 11 cm , IJ = 11 cm , JH = 11 cm

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5. In a right angled triangle, if one of the sides is 20 cm and hypotenuse 101 cm, find the third side

(i) 98.00 cm (ii) 100.00 cm (iii) 97.00 cm (iv) 101.00 cm (v) 99.00 cm

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6. In a right angled triangle, if the two non-hypotenuse sides are 8 cm and 15 cm, find the hypotenuse

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

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7. In the given figure, $\triangle BCD$ is right-angled at C. Also, $CE \perp BD$. Which of the following are true?

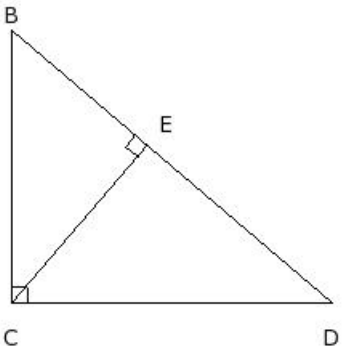
a) $CD^2 = DB \cdot DE$

b) $CD^2 = BD \cdot BE$

c) $CE^2 = BE \cdot ED$

d) $BC^2 = DB \cdot DE$

e) $BC^2 = BD \cdot BE$



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

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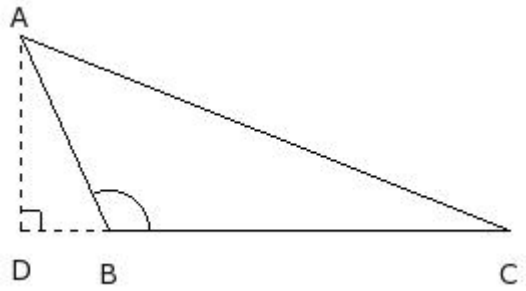
8. In the given figure, $\triangle ABC$ is an obtuse angled triangle and $AD \perp BC$. Then



(i) $AC^2 = AB^2 + BC^2 + BD^2$

(ii) $AC^2 = AB^2 + BC^2 - 2\,BC \,.\, BD$

(iii) $AC^2 = AB^2 + BC^2 + 2\,BC \,.\, BD$

(iv) $AC^2 = AB^2 + BC^2 + 2\,AB \,.\, BC$

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

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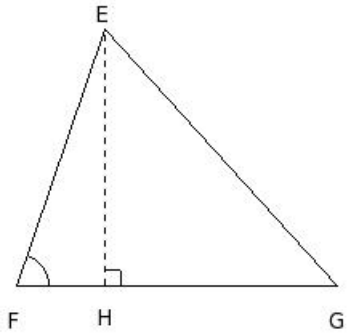
9. In the given figure, $\triangle EFG$ is an acute angled triangle and $EH \perp FG$. Then



(i) $EG^2 = EF^2 + FG^2 - 2\,EF \,.\, FG$

(ii) $EG^2 = EF^2 + FG^2 + 2\,EF \,.\, FG$

(iii) $EG^2 = EF^2 + FG^2 + 2\,FG \,.\, FH$

(iv) $EG^2 = EF^2 + FG^2 - 2\,FG \,.\, FH$

(v) $EG^2 = EF^2 + FG^2 - EH^2$

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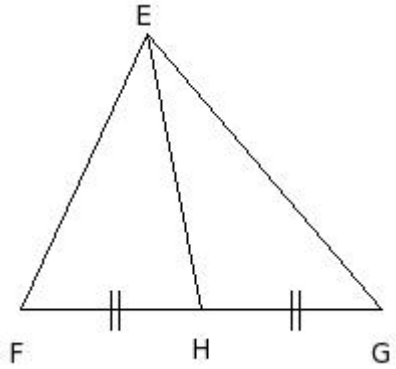
10. In the given figure, $\triangle EFG$ is a triangle with EH being the median of FG. Then



(i)

$EF^2 + EG^2 = EH^2$

(ii) $EF^2 + EG^2 = 2\ FH^2 + 2\ HG^2$

(iii) $EF^2 + EG^2 = 2\ FH^2 + 2\ EH^2$

(iv) $EF^2 + EG^2 = FG^2$

(v) $EF^2 + EG^2 = 2\ HG^2 + 2\ EH^2$

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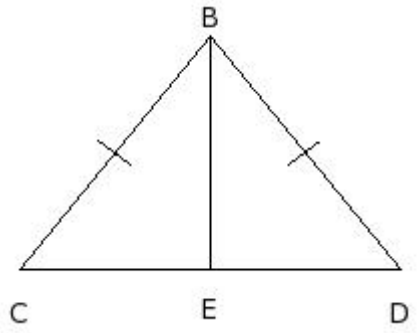
11. In the given figure, $\triangle BCD$ is a triangle in which BC = BD and E is a point on CD



(i) $BC^2 + BE^2 = CE \cdot DE$

(ii) $BC^2 + BE^2 = CD^2$

(iii) $BC^2 - BE^2 = BE \cdot DE$

(iv) $BC^2 - BE^2 = CE \cdot DE$

(v) $BC^2 - BE^2 = BE \cdot CE$

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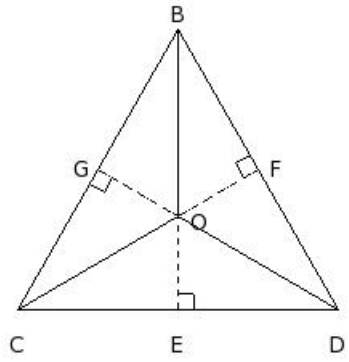
12. In the given figure, in $\triangle BCD$, 'O' is a point inside the triangle. $OE \perp CD$, $OF \perp BD$ and $OG \perp BC$. Then



(i) $BG^2 + CE^2 + DF^2 = OB^2 + OC^2 + OD^2 - OE^2 - OF^2 - OG^2$

(ii) $BG^2 + CE^2 + DF^2 = BC^2 + ED^2 + DB^2 - CG^2 - DE^2 - FB^2$

(iii) $BG^2 + CE^2 + DF^2 = OB^2 + OC^2 + OD^2 + OE^2 + OF^2 + OG^2$

(iv) $BG^2 + CE^2 + DF^2 = OG^2 + OF^2 + OE^2$

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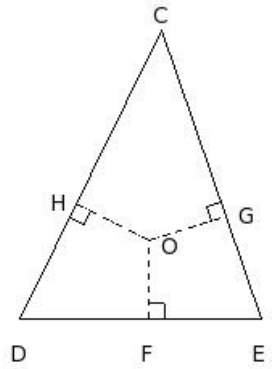
13. In the given figure, in $\triangle CDE$, 'O' is a point inside the triangle. $OF \perp DE$, $OG \perp CE$ and $OH \perp CD$. Then



(i) $CH^2 + DF^2 + EG^2 = OH \cdot OF + OF \cdot OG + OG \cdot OH$

(ii) $CH^2 + DF^2 + EG^2 = OC \cdot OD + OD \cdot OE + OE \cdot OC$

(iii) $CH^2 + DF^2 + EG^2 = CG^2 + EF^2 + DH^2$

(iv) $CH^2 + DF^2 + EG^2 = OF^2 + OG^2 + OH^2$

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14. In the given figure, $\triangle FHG$ is right-angled at H . T is the mid-point of FH and U is the mid-point of GH . Which of the following cases are true ?

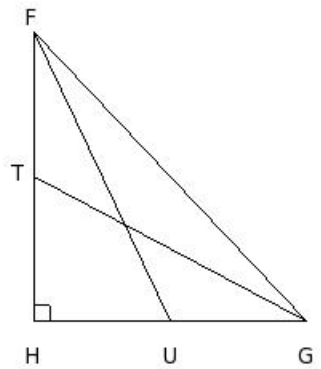
a) $4\ FU^2 = 4\ FH^2 + GH^2$

b) $4\ GT^2 = 4\ GH^2 + FH^2$

c) $4\ GT^2 = 4\ FH^2 + GH^2$

d) $4\ (FU^2 + GT^2) = 5\ FG^2$

e) $4\ FU^2 = 4\ GH^2 + FH^2$



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

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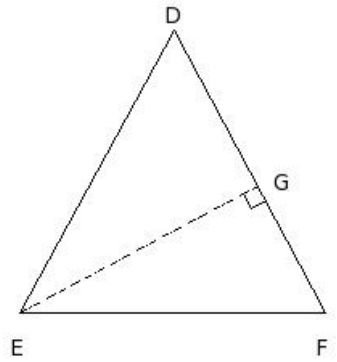
15. In the given figure, $\triangle DEF$ is isosceles with DE = DF and EG $\perp$ DF. Then



(i) $EG^2 - DG^2 = 2\ FG\ .\ DG$

(ii) $EG^2 - FG^2 = 2\ FG\ .\ DG$

(iii) $EG^2 + DG^2 = 2\ FG\ .\ DG$

(iv) $EG^2 + FG^2 = 2\ FG\ .\ DG$

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

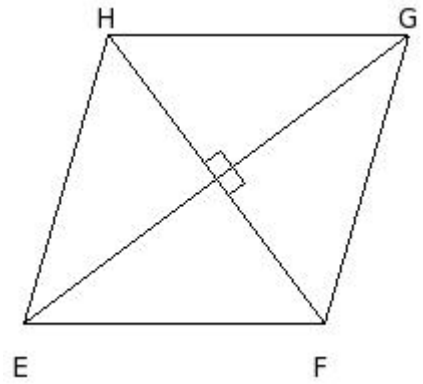
a) $2\ EF^2 = EG^2 + FH^2$

b) $4\ EF^2 = EG^2 + FH^2$

c) $EF^2 + FG^2 + GH^2 + EH^2 = EG^2 + FH^2$

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

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



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

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

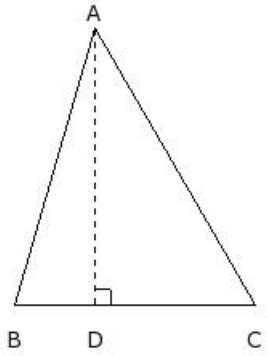
a) $AB^2 - BD^2 = AC^2 - CD^2$

b) $AB^2 - AC^2 = BD^2 - CD^2$

c) $AB^2 + AC^2 = BD^2 + CD^2$

d) $AB^2 + BD^2 = AC^2 + CD^2$

e) $AD^2 = 2\ BD\ .\ CD$



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

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

(i) $\sqrt{3}$ a, $\frac{1}{2}\sqrt{3}$ a

(ii) $\frac{1}{2}\sqrt{3}$ a, $\frac{1}{2}\sqrt{3}$ a^2

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

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

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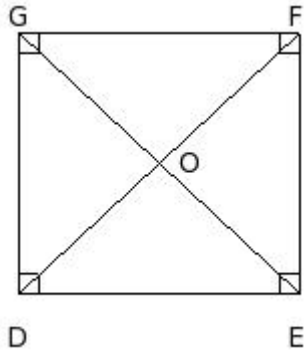
19. In the given figure, O is a point in the interior of the rectangle DEFG. Then



(i) $OD^2 + OE^2 + OF^2 + OG^2 = DE^2 + EF^2 + FG^2 + GD^2$

(ii) $OD^2 - OF^2 = OE^2 - OG^2$

(iii) $OD^2 + OF^2 = OE^2 + OG^2$

(iv) $OD^2 + OE^2 + OF^2 + OG^2 = DF^2 + EG^2$

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20. In the given figure, $\triangle FGH$, I is the mid-point of GH and $FJ \perp GH$. Which of the following are true ?

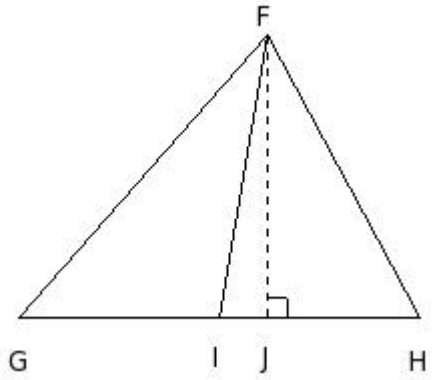
a) $FG^2 + FH^2 = 2\ FI^2 + \frac{1}{2}\ GH^2$

b) $FH^2 = FJ^2 + GH \cdot IJ + \frac{1}{4}\ GH^2$

c) $FH^2 = FI^2 + GH \cdot IJ + \frac{1}{4} GH^2$

d) $FG^2 = FI^2 - GH \cdot IJ + \frac{1}{4} GH^2$

e) $FG^2 = FJ^2 - GH \cdot IJ + \frac{1}{4} GH^2$



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

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21. 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 ?

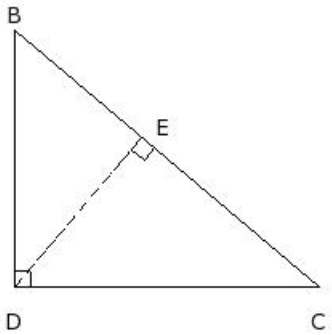
a) $a^2 + b^2 = c^2$

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

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

d) ab = pc

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



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

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22. 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) $7\,AD^2 = 3\,AB^2$

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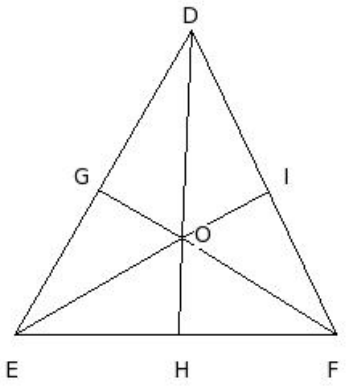
23. In the given figure, DEF is a triangle and 'O' is a point inside △DEF. The angular bisector of ∠EOD, ∠FOE & ∠DOF meet DE, EF & FD at G, H & I respectively . Then



(i) DG . EH . FI = DE . EF . FD

(ii) DG . EH . FI = OD . OE . OF

(iii) DG . EH . FI = OG . OH . OI

(iv) DG . EH . FI = GH . HI . IG

(v) DG . EH . FI = GE . HF . ID

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

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

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25. The foot of a ladder resting on a wall from the foot of the wall is 10 mt. If the height of the top of the ladder from ground is 11 mt, find the length of the ladder

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

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26. Two poles of heights 7 mt and 17 mt stand vertically on a plane ground. If the distance between their feet is 10 mt, find the distance between their tops

(i) 12.14 mt (ii) 15.14 mt (iii) 14.14 mt (iv) 13.14 mt (v) 16.14 mt

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27. A ladder reaches a window which is 8 mt 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 15 mt high. Find the width of the street if the length of the ladder is 21 mt

(i) 34.11 mt (ii) 35.11 mt (iii) 36.11 mt (iv) 32.11 mt (v) 33.11 mt

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Assignment Key

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