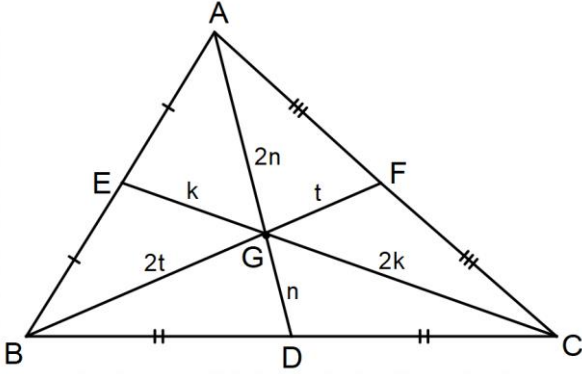




1 – Üçgende Kenaorortay ve Ağırlık Merkezi :



Bir üçgeninin üç kenarortayı da aynı noktadan geçer. Bu noktaya üçgenin **ağırlık merkezi** denir.



G noktası ABC üçgenin ağırlık merkezidir.

Bu durumda ;

$$[AD] \text{ kenarortay} \Rightarrow |BD| = |DC| \text{ ve } |AG| = 2 \cdot |GD|$$

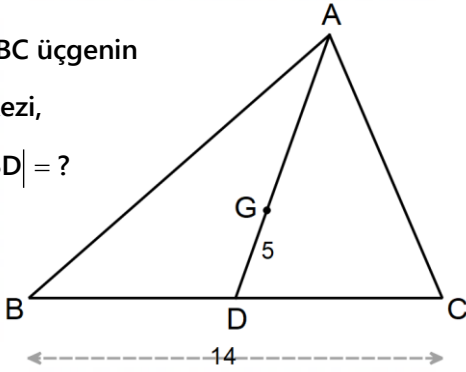
$$[BF] \text{ kenarortay} \Rightarrow |AF| = |FC| \text{ ve } |BG| = 2 \cdot |GF|$$

$$[CE] \text{ kenarortay} \Rightarrow |AE| = |EB| \text{ ve } |CG| = 2 \cdot |GE|$$

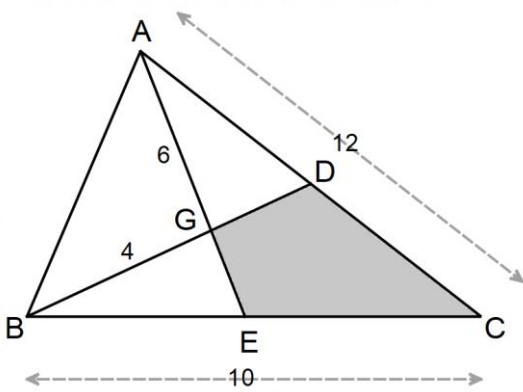
Sorular :

1. G noktası ABC üçgenin ağırlık merkezi,

$$|AG| = ? \quad |BD| = ?$$

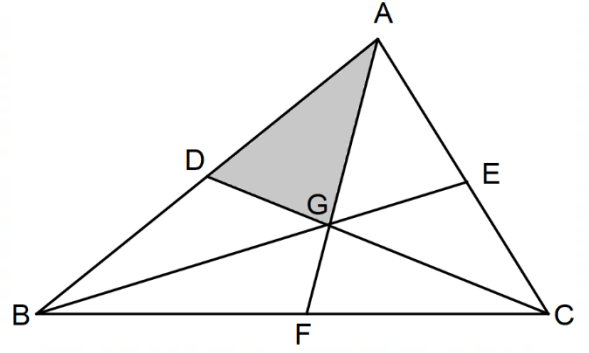


2.



G noktası ABC üçgenin ağırlık merkezi,
Çevre(GECD) = ?

3.

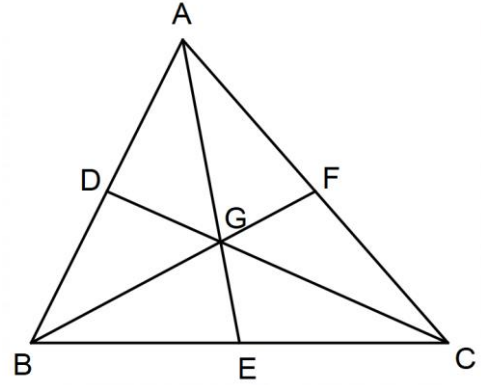


G noktası ABC üçgenin ağırlık merkezi,

$$|AF| = 15, \quad |CD| = 12, \quad |AB| = 14$$

$$\text{Çevre}(ADG) = ?$$

4.



G noktası ABC üçgenin ağırlık merkezi,

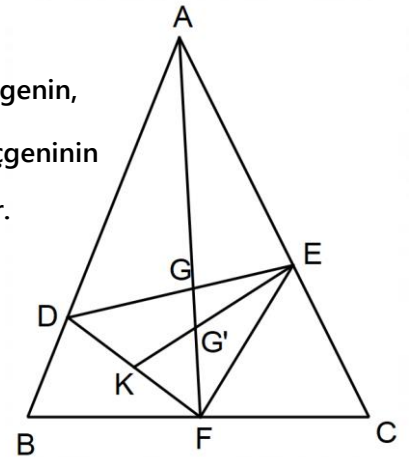
$$|DG| + |FG| + |EG| = 8 \text{ ise } |AE| + |BF| + |CD| = ?$$

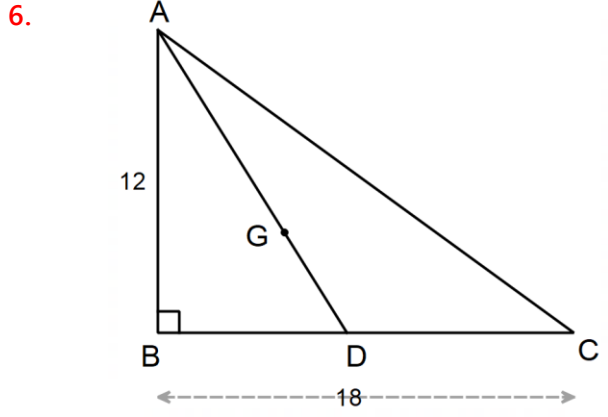
5.

G noktası ABC üçgenin,
G' noktası DEF üçgeninin
ağırlık merkezidir.

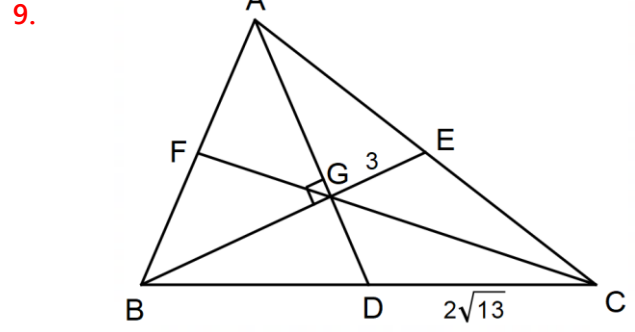
$$|G'F| = 4 \text{ br ise}$$

$$|AF| = ?$$

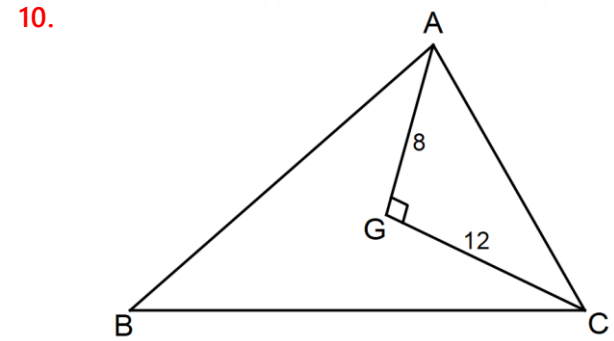




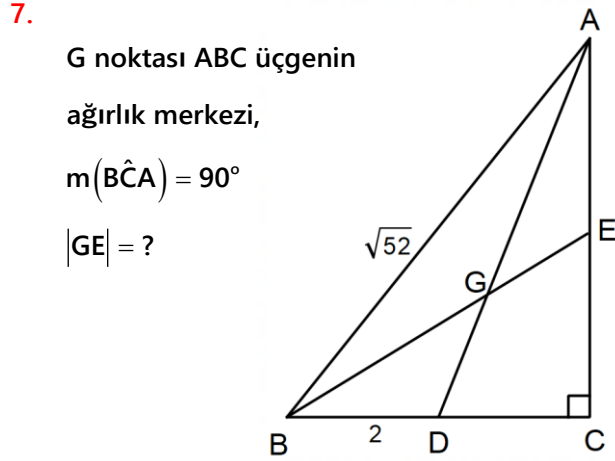
G noktası ABC üçgenin ağırlık merkezi,
 $m(\hat{A}BC) = 90^\circ$
 $|AG| = ?$



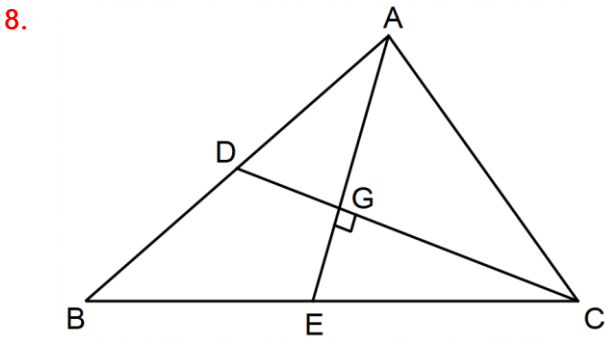
G noktası ABC üçgenin ağırlık merkezi,
 $m(\hat{B}GA) = 90^\circ$, $|AF| = ?$



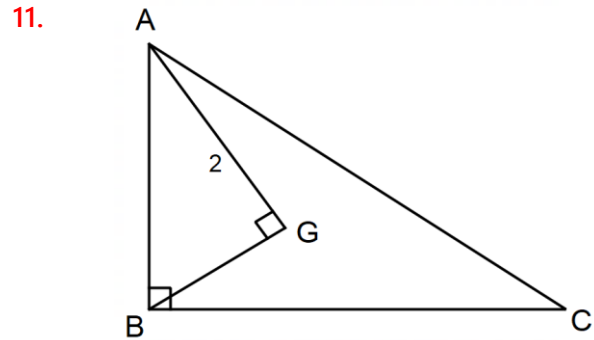
G noktası ABC üçgenin ağırlık merkezi,
 $m(\hat{A}GC) = 90^\circ$
 $|AB| = ?$



G noktası ABC üçgenin
ağırlık merkezi,
 $m(\hat{B}CA) = 90^\circ$
 $|GE| = ?$

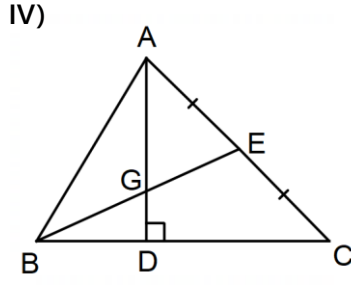
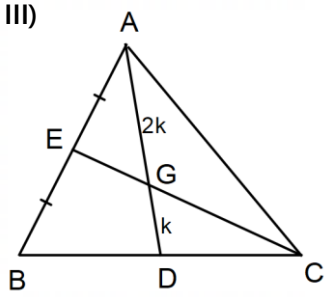
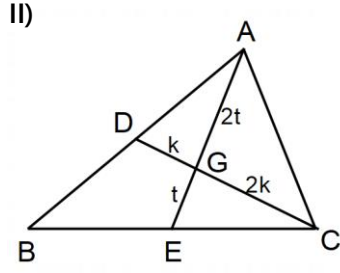
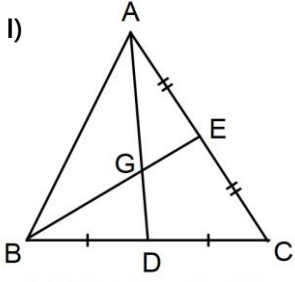


G noktası ABC üçgenin ağırlık merkezi, $m(\hat{E}GC) = 90^\circ$
 $|AE| = 15$, $|DC| = 18$, $|BE| = ?$

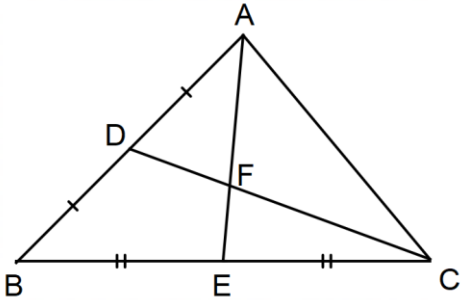


G noktası ABC üçgenin ağırlık merkezi,
 $m(\hat{A}BC) = 90^\circ$, $m(\hat{A}GB) = 90^\circ$
 $|BC| = ?$

12. Aşağıdaki üçgenlerin hangisinde veya hangilerinde G noktası kesinlikle ağırlık merkezidir?



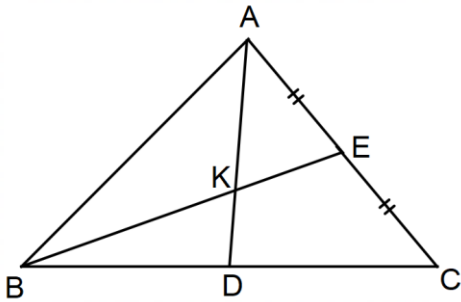
13.



$$|BD| = |DA|, |BE| = |EC|$$

$$|AE| = 12, |FC| = 8, |DF| + |AF| = ?$$

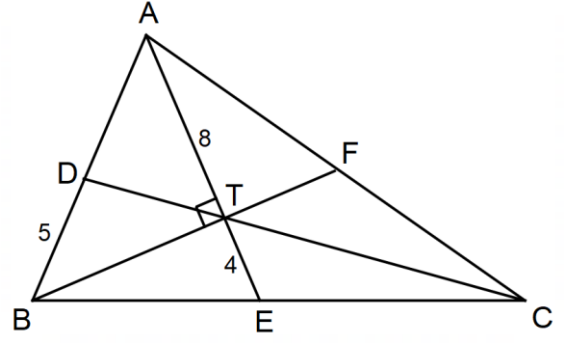
14.



$$|BK| = 2 \cdot |KE|, |AE| = |EC|$$

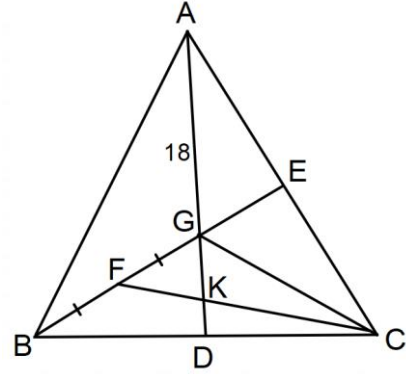
$$|AD| = 6, |BC| = 8, |DC| + |AK| = ?$$

15.



$$m(\hat{BTA}) = 90^\circ, |BT| = 2 \cdot |TF|, |BF| = ?$$

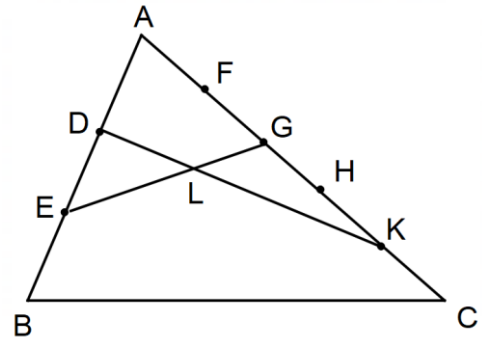
16.



ABC üçgeninde G ağırlık merkezidir.

$$|GK| = ?$$

17.



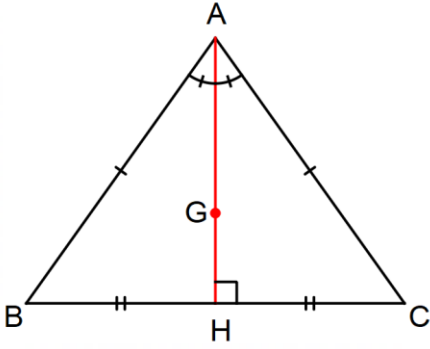
ABC üçgeninde $[AB]$ kenarı 3 eşit parçaya,

$[AC]$ kenarı 5 eşit parçaya bölünmüştür.

$$|DL| = 2x - 1 \text{ cm}, |LK| = x + 4 \text{ cm} \text{ ise } x = ?$$

2 – İkizkenar Üçgende Kenarortay ve

Ağırlık Merkezi :



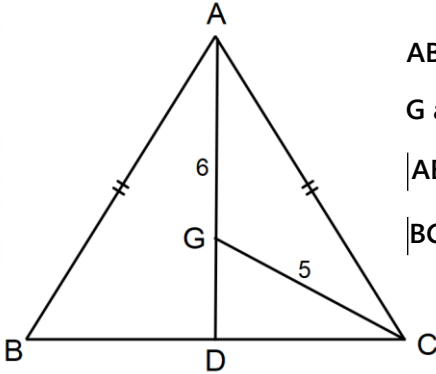
ABC ikizkenar üçgen, $|AB| = |AC|$, G ağırlık merkezi,

Bu durumda ;



Sorular :

1.

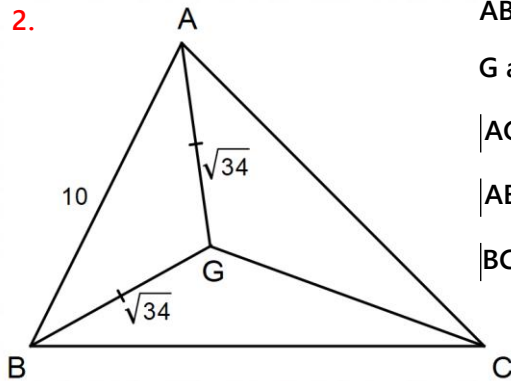


ABC üçgeninde
G ağırlık merkezi,

$$|AB| = |AC|$$

$$|BC| = ?$$

2.



ABC üçgeninde
G ağırlık merkezi,

$$|AG| = |BG| = \sqrt{34}$$

$$|AB| = 10$$

$$|BC| = ?$$

3.

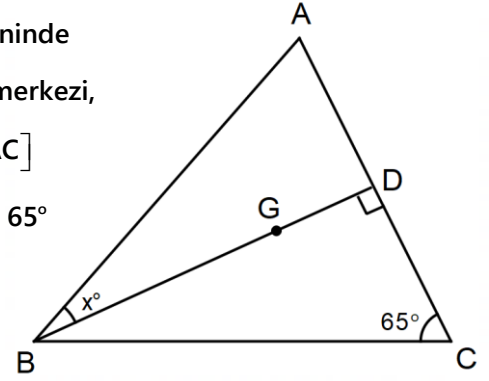
ABC üçgeninde

G ağırlık merkezi,

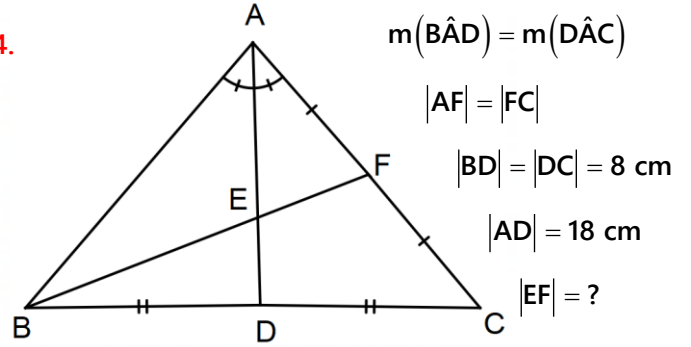
$$[BD] \perp [AC]$$

$$m(\hat{BCA}) = 65^\circ$$

$$x = ?$$



4.



$$m(\hat{BAD}) = m(\hat{DAC})$$

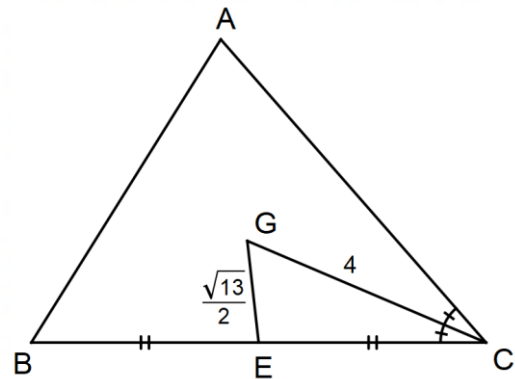
$$|AF| = |FC|$$

$$|BD| = |DC| = 8 \text{ cm}$$

$$|AD| = 18 \text{ cm}$$

$$|EF| = ?$$

5.



ABC üçgeninin ağırlık merkezi G,

$$m(\hat{BCG}) = m(\hat{ACG})$$

$$|BE| = |EC|$$

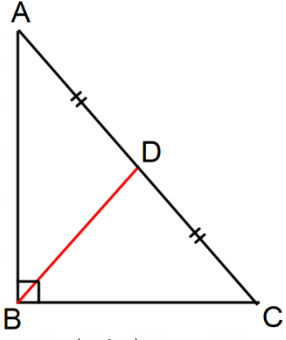
$$|AC| = ?$$

Daha fazla test ve konu anlatımı için matematikchi.net

3 – Muhteşem Üçlü :



I)



$$m(\widehat{ABC}) = 90^\circ$$

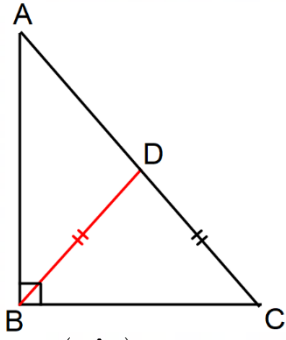
ve

$$|AD| = |CD|$$



$$|AD| = |CD| = |BD|$$

II)



$$m(\widehat{ABC}) = 90^\circ$$

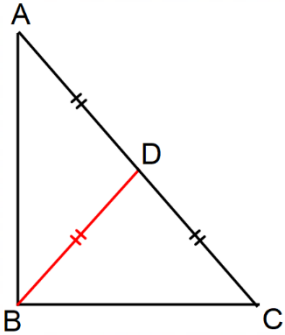
ve

$$|BD| = |CD|$$



$$|AD| = |CD| = |BD|$$

III)



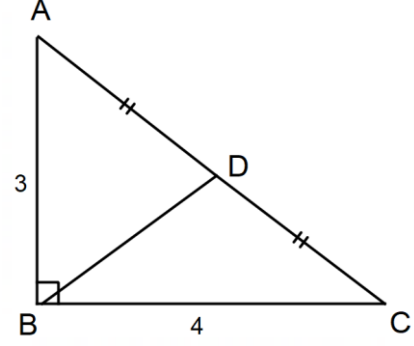
$$|AD| = |CD| = |BD|$$



$$m(\widehat{ABC}) = 90^\circ$$

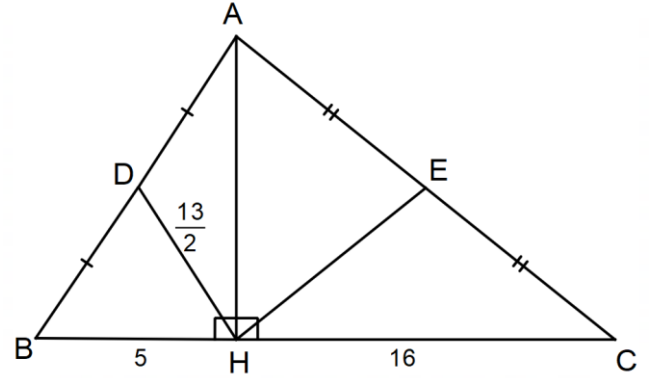
Sorular :

1.



$$m(\widehat{ABC}) = 90^\circ, \quad |BD| = ?$$

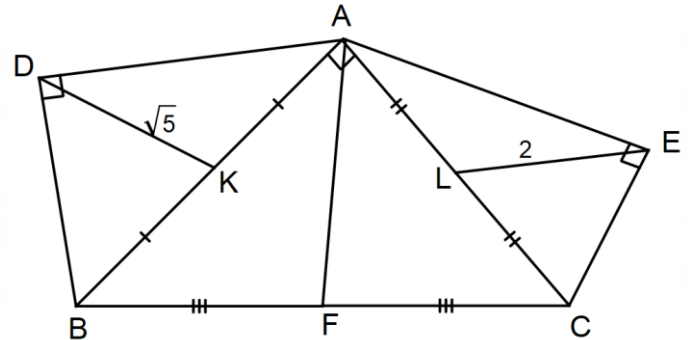
2.



$$[AH] \perp [BC], \quad |BD| = |AD|, \quad |AE| = |CE|$$

$$|HE| = ?$$

3.

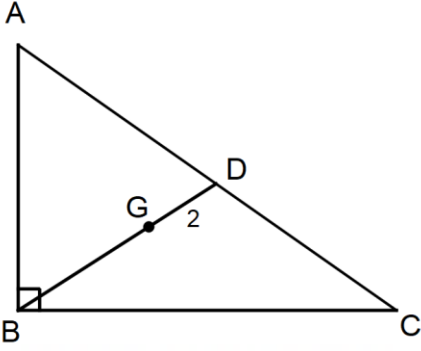


$$m(\widehat{BDA}) = m(\widehat{AEC}) = m(\widehat{BAC}) = 90^\circ$$

$$|BK| = |AK|, \quad |AL| = |CL|, \quad |BF| = |CF|$$

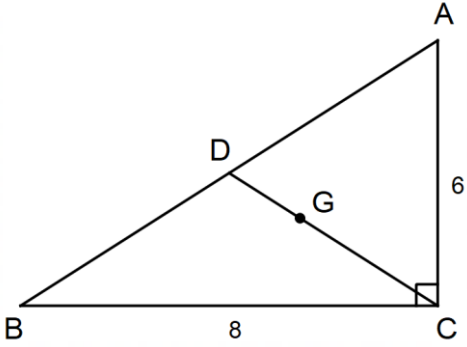
$$|AF| = ?$$

4.



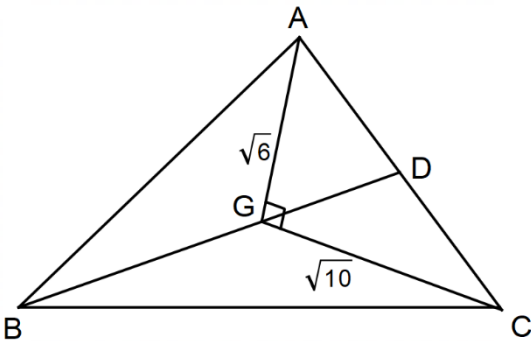
ABC üçgeninde G ağırlık merkezi, $m(\hat{A}BC) = 90^\circ$
 $|GD| = 2$ br , $|AC| = ?$

5.



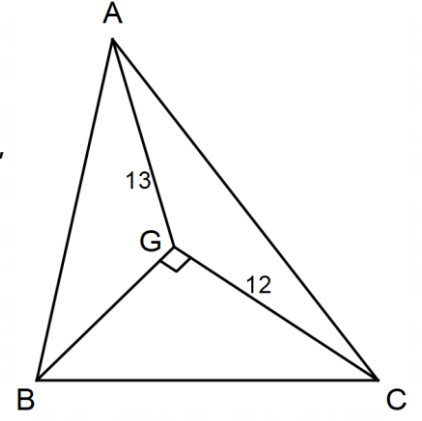
ABC üçgeninde G ağırlık merkezi, $m(\hat{A}CB) = 90^\circ$
 $|DG| = ?$

6.



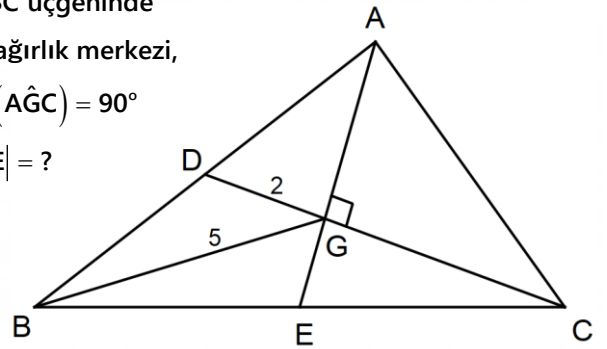
ABC üçgeninde G ağırlık merkezi, $m(\hat{A}GC) = 90^\circ$
 $|BG| = ?$

7.



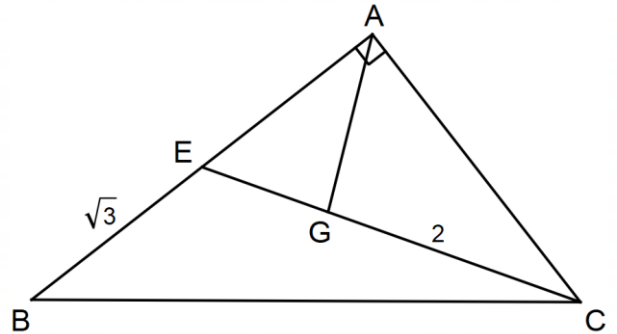
ABC üçgeninde
 G ağırlık merkezi,
 $m(\hat{B}GC) = 90^\circ$
 $|BG| = ?$

8.



ABC üçgeninde
 G ağırlık merkezi,
 $m(\hat{A}GC) = 90^\circ$
 $|GE| = ?$

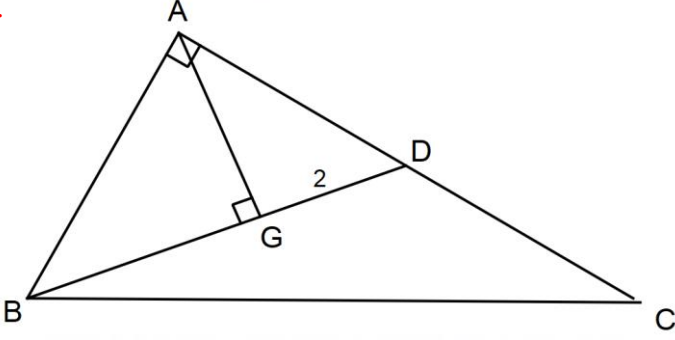
9.



ABC üçgeninde G ağırlık merkezi,
 $m(\hat{B}AC) = 90^\circ$, $|AG| = ?$



10.

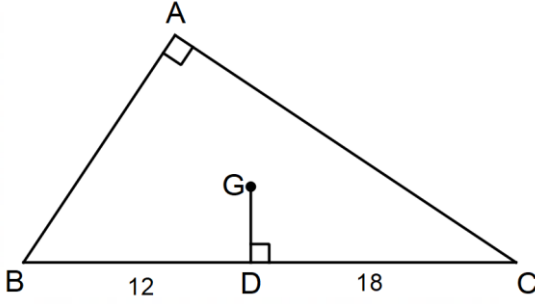


ABC üçgeninin ağırlık merkezi G noktasıdır.

$$m(\widehat{BAC}) = m(\widehat{BGA}) = 90^\circ$$

$$|BC| = ?$$

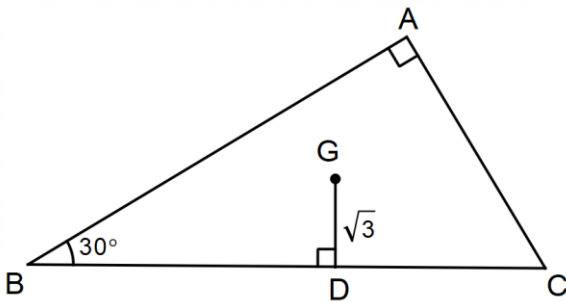
11.



ABC üçgeninde G ağırlık merkezi ,

$$m(\widehat{BAC}) = 90^\circ , \quad |GD| = ?$$

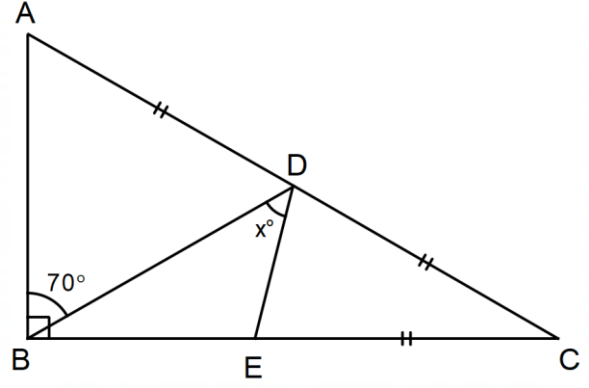
12.



ABC üçgeninde G ağırlık merkezi,

$$m(\widehat{BAC}) = 90^\circ , \quad m(\widehat{ABC}) = 30^\circ , \quad |AC| = ?$$

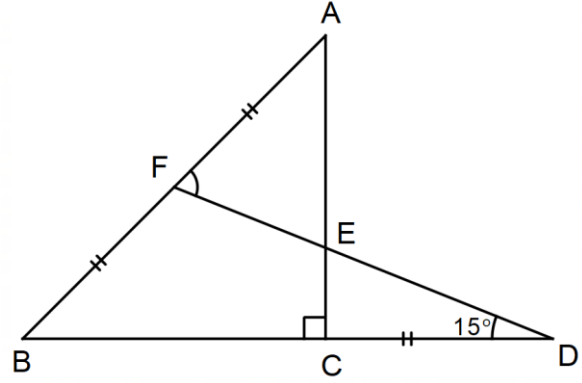
13.



$$m(\widehat{ABC}) = 90^\circ , \quad m(\widehat{ABD}) = 70^\circ , \quad |AD| = |CD| = |CE|$$

$$x = ?$$

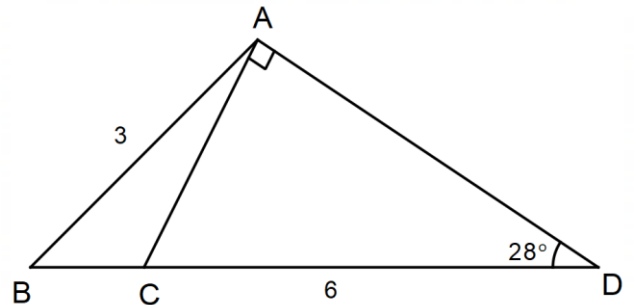
14.



$$|AF| = |FB| = |CD| , \quad m(\widehat{ACB}) = 90^\circ , \quad m(\widehat{FDB}) = 15^\circ$$

$$m(\widehat{AFD}) = ?$$

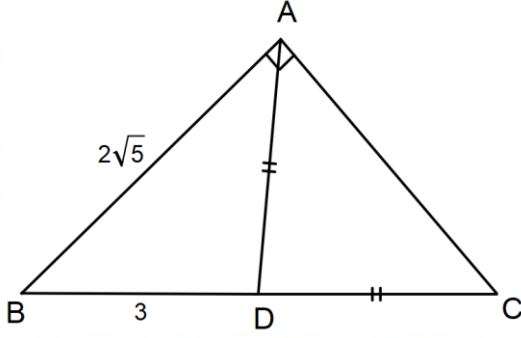
15.



$$m(\widehat{CAD}) = 90^\circ , \quad m(\widehat{ADB}) = 28^\circ , \quad m(\widehat{BAC}) = ?$$

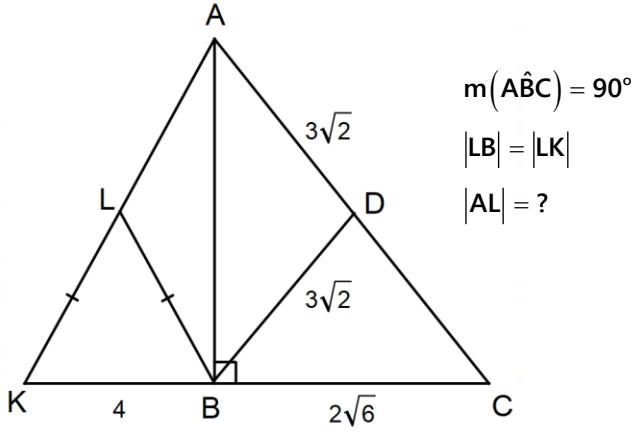


16.



$m(\hat{BAC}) = 90^\circ$, $|AD| = |CD|$, $|AC| = ?$

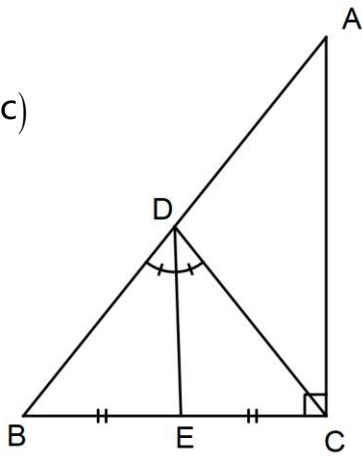
17.



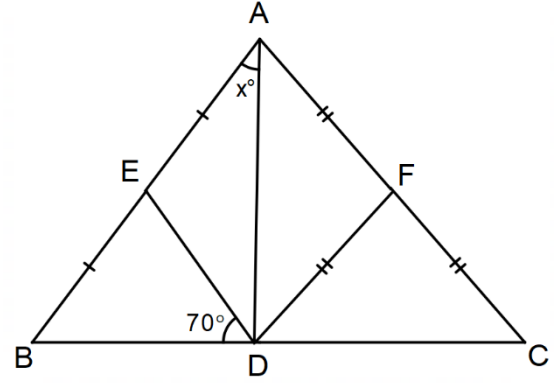
$m(\hat{ABC}) = 90^\circ$
 $|LB| = |LK|$
 $|AL| = ?$

18.

$m(\hat{BCA}) = 90^\circ$
 $m(\hat{BDE}) = m(\hat{EDC})$
 $|BE| = |EC|$
 $|BC| = 6$ br
 $|AC| = 8$ br
 $|DE| = ?$

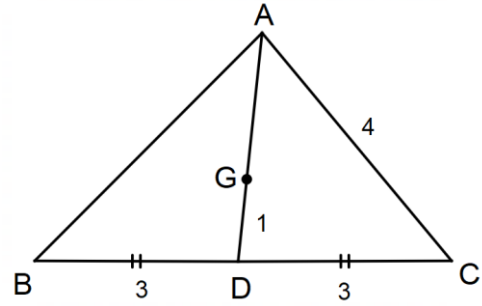


19.



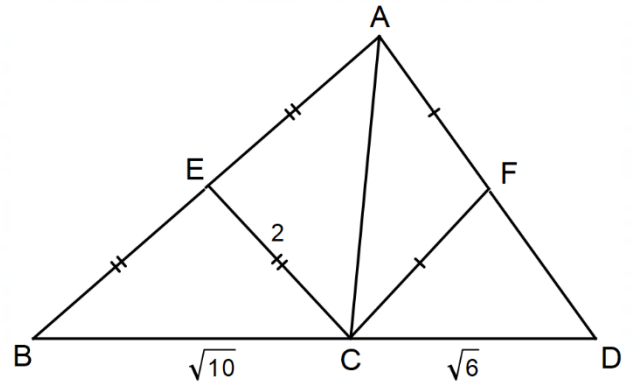
$|AE| = |BE|$, $|AF| = |CF| = |DF|$, $m(\hat{EDB}) = 70^\circ$, $x = ?$

20.



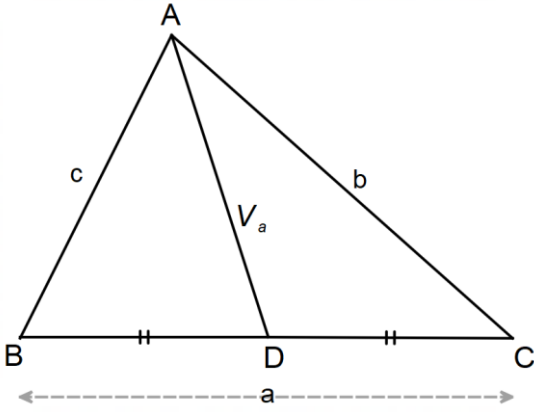
ABC üçgeninde G ağırlık merkezi , $|AB| = ?$

21.



$|BE| = |AE| = |CE|$, $|AF| = |CF|$, $|FD| = ?$

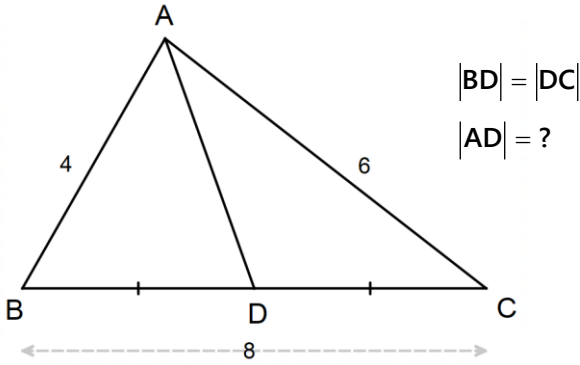
4 – Kenarortay Teoremi (Kenarortayın Uzunluğu) :



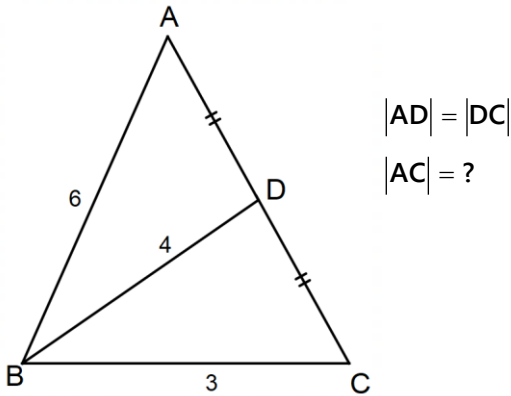
Formül : $b^2 + c^2 = \frac{a^2}{2} + 2.V_a^2$

Sorular :

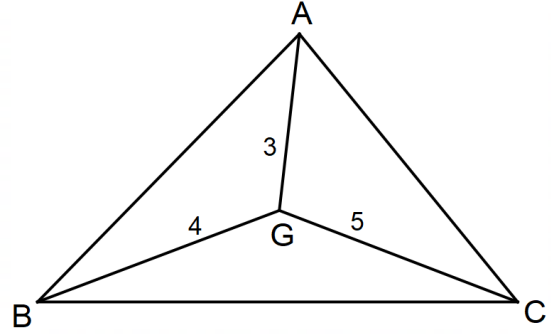
1.



2.

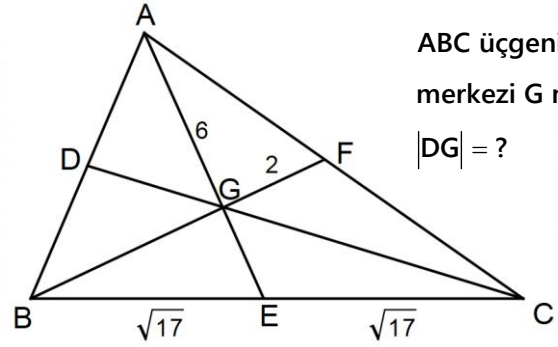


3.



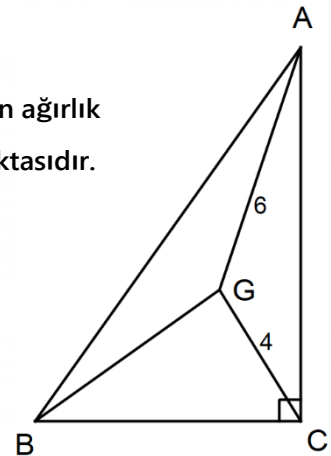
ABC üçgeninin ağırlık merkezi G noktasıdır.
|AC| = ?

4.



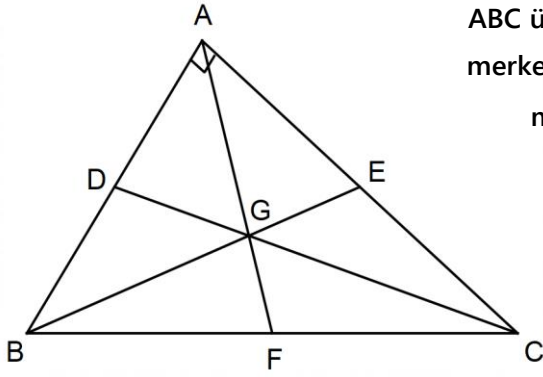
5.

ABC üçgeninin ağırlık merkezi G noktasıdır.
 $m(\hat{B\hat{C}A}) = 90^\circ$
|AG| = 6 br
|CG| = 4 br
|BG| = ?



5A – Kenarortayda 5 li Formüller

(Kenarlar Dik İken) :



ABC üçgeninin ağırlık merkezi G noktasıdır.

$$m(\hat{BAC}) = 90^\circ$$

$$[AF] = V_a$$

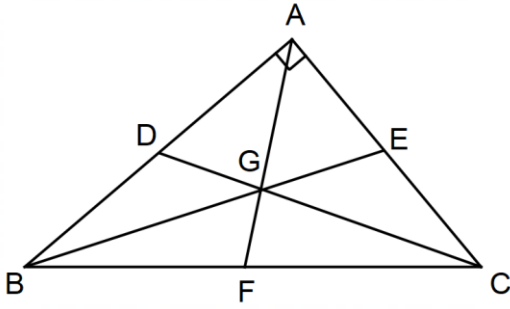
$$[BE] = V_b$$

$$[CD] = V_c$$

$$\text{Formül : } 5.V_a^2 = V_b^2 + V_c^2$$

Sorular :

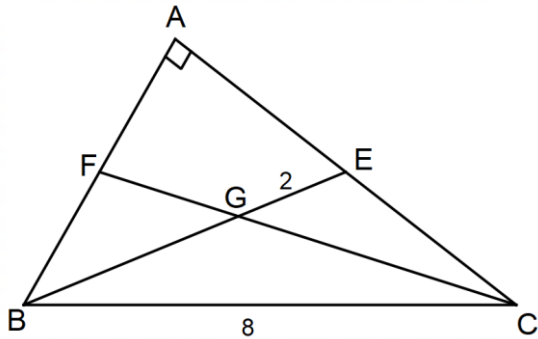
1.



ABC üçgeninin ağırlık merkezi G noktasıdır.

$$|BE| = 8 \text{ br} , \quad |CD| = 6 \text{ br} \quad |AF| = ? \quad |BC| = ?$$

2.

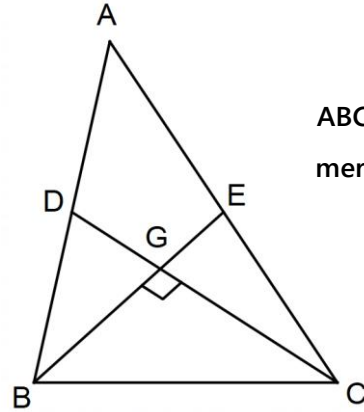


ABC üçgeninin ağırlık merkezi G noktasıdır.

$$m(\hat{BAC}) = 90^\circ \quad |FG| = ?$$

5B – Kenarortayda 5 li Formüller

(Kenarortaylar Dik İken) :



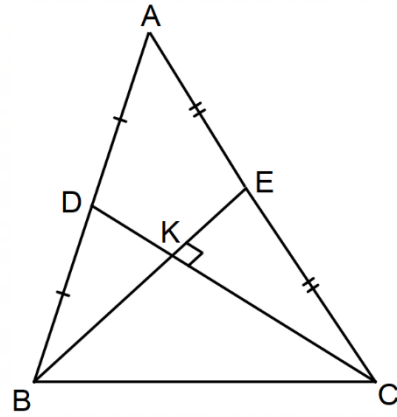
ABC üçgeninin ağırlık merkezi G noktasıdır.

$$m(\hat{BGC}) = 90^\circ$$

$$\text{Formül : } 5.a^2 = b^2 + c^2$$

Sorular :

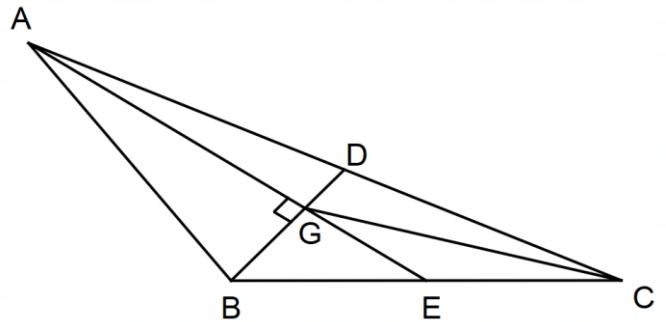
1.



$$|AD| = |DB| , \quad |AE| = |EC| , \quad |AB| = 2\sqrt{5} , \quad |AC| = 5$$

$$|BC| = ?$$

2.



ABC üçgeninin ağırlık merkezi G noktasıdır.

$$m(\hat{AGB}) = 90^\circ \quad |AC| = 2\sqrt{37} \quad |BC| = 2\sqrt{13}$$

$$|CG| = ?$$

Daha fazla test ve konu anlatımı için matematikchi.net

$$1) |AF| = 2\sqrt{5} \quad |BC| = 4\sqrt{5}$$

$$2) \frac{2\sqrt{11}}{3}$$

$$1) 3$$

$$2) 2\sqrt{10}$$