Video Anlatım

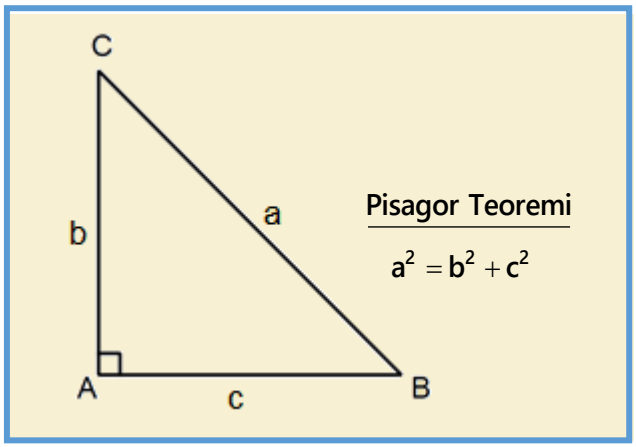
Dik ve Özel Üçgenler

matematikchi.net

1- Pisagor Teoremi :

ABC dik üçgen,

$m(\hat{A}) = 90^o$



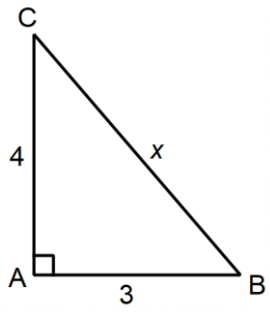
Pisagor Teoremi

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

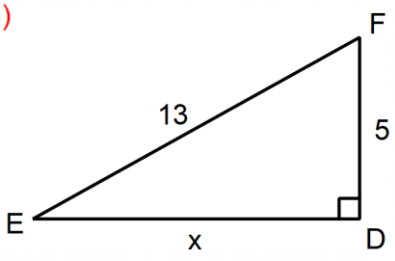
Sorular :

1. Aşağıdaki dik üçgenlerde x uzunluğu kaç birimdir?

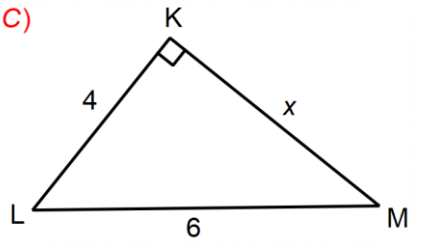
A)



B)

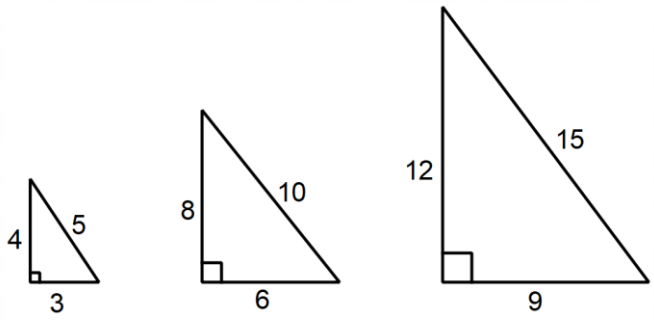


C)



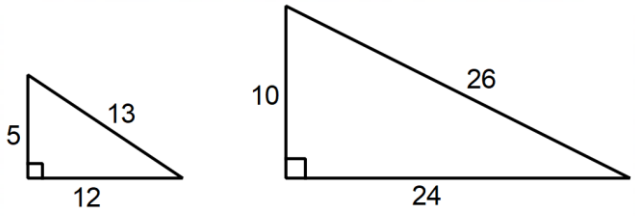
Bazı Özel Dik Üçgenler :

3k, 4k, 5k dik üçgeni



(k=1) (k=2) (k=3)

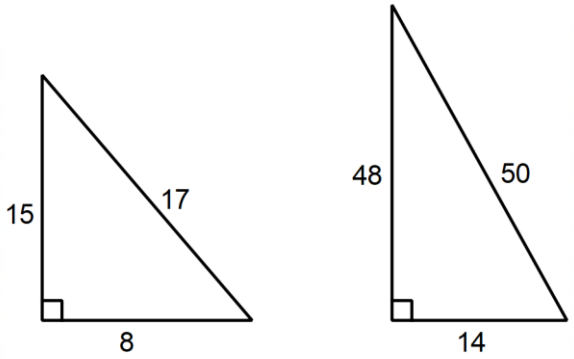
5k, 12k, 13k dik üçgeni



(k=1) (k=2)

8k, 15k, 17k dik üçgeni

7k, 24k, 25k dik üçgeni



(k=1) (k=2)

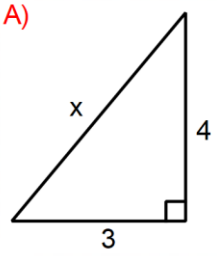
1) A) 5 B) 12 C) $2\sqrt{5}$

Dik ve Özel Üçgenler

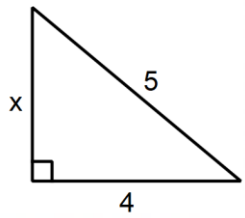
matematikchi.net

2. Aşağıdaki dik üçgenlerde x uzunluğunu, özel dik üçgenlerden yararlanarak bulun.
(Pisagor teoremini kullanmadan)

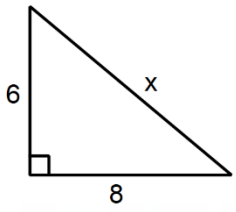
A)



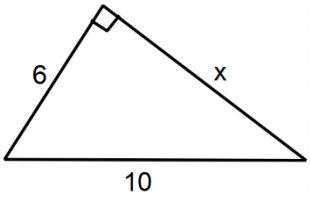
B)



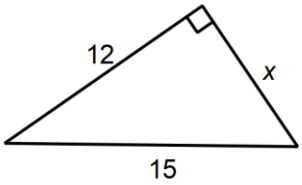
C)



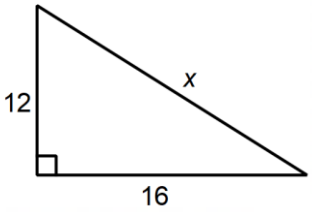
D)



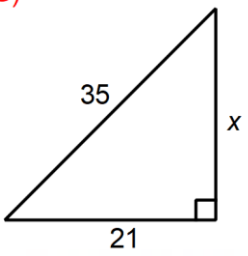
E)



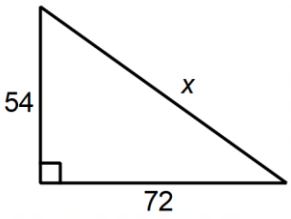
F)



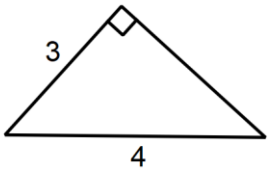
G)



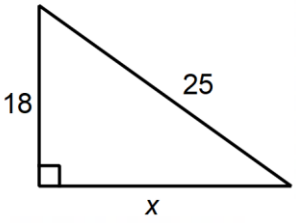
H)



J)

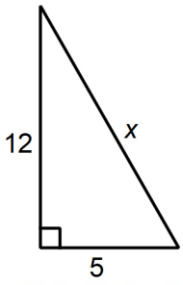


K)

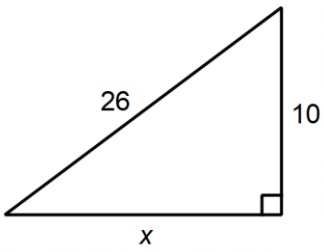


3. Aşağıdaki dik üçgenlerde x uzunluğunu, özel dik üçgenlerden yararlanarak bulun.
(Pisagor teoremini kullanmadan)

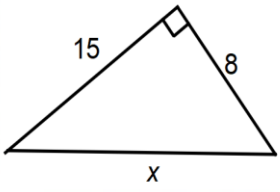
A)



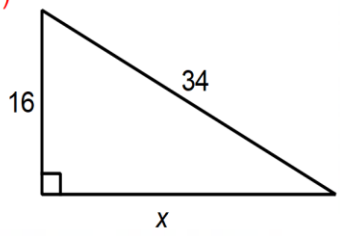
B)



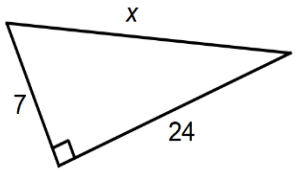
C)



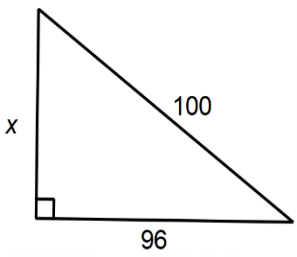
D)



E)

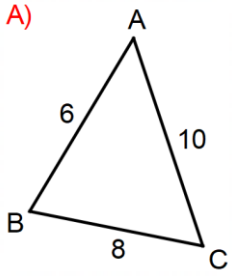


F)

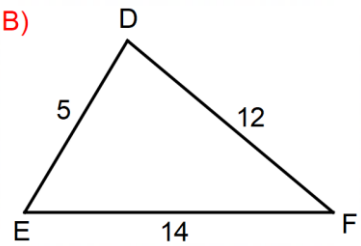


4. Aşağıdaki üçgenlerde varsa dik açıları saptayın.

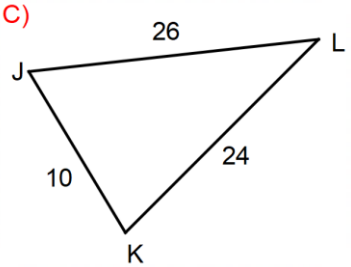
A)



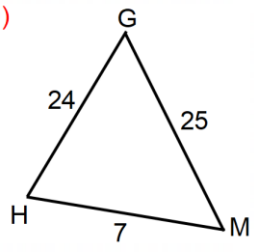
B)



C)



D)



2) A) 5 B) 3 C) 10 D) 8 E) 9 F) 20 G) 28 H) 90
J) Özel dik üçgen değil K) Özel dik üçgen değil

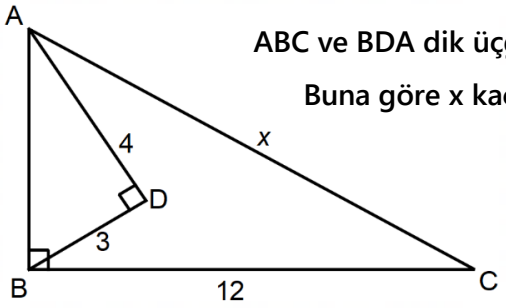
3) A) 13 B) 24 C) 17 D) 30 E) 25 F) 28

4) A) $\hat{B} = 90°$ B) Dik açı yok C) $\hat{K}=90°$ D) $\hat{H}=90°$

Dik ve Özel Üçgenler

matematikchi.net

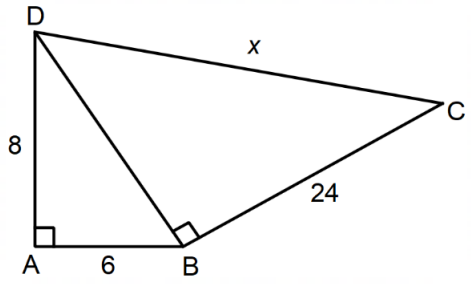
5.



ABC ve BDA dik üçgenlerdir.

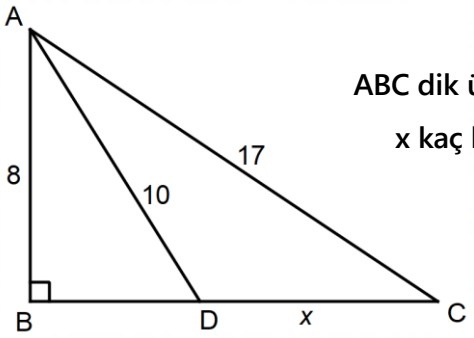
Buna göre x kaç birimdir?

6.



DAB ve DBC dik üçgenler ise x kaç birimdir?

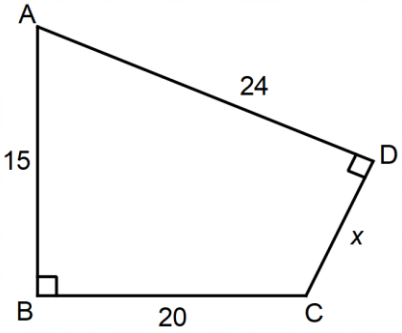
7.



ABC dik üçgen ise

x kaç birimdir?

8.



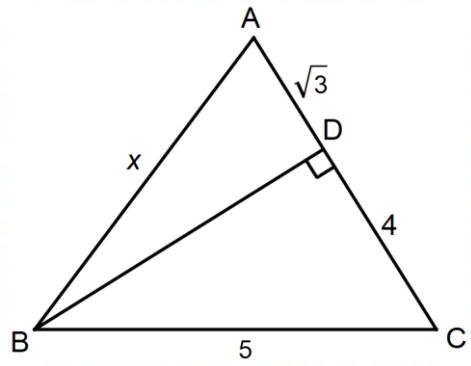
ABCD dörtgeninde

$m(\hat{B}) = 90°$

$m(\hat{D}) = 90°$

ise x kaç birimdir?

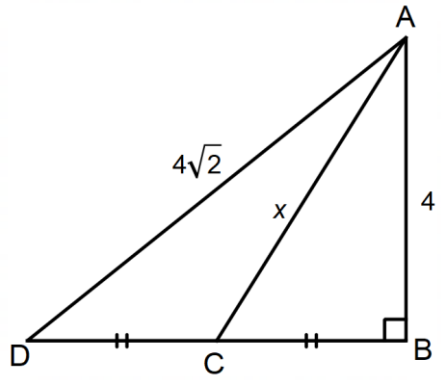
9.



ABC üçgeninde,

$[BD] \perp [AC]$ ise $|AB|$ kaç birimdir?

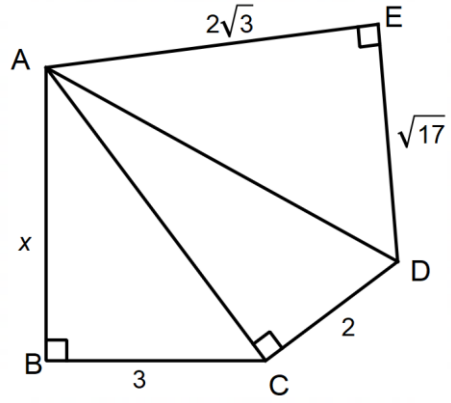
10.



ABD dik üçgeninde,

$|DC| = |CB|$ ise x kaç birimdir?

11.



ABCDE beşgeninde,

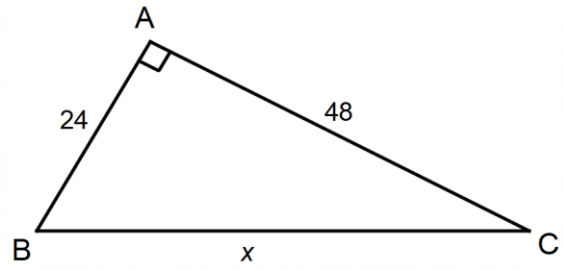
$m(A\hat{B}C) = m(A\hat{C}D) = m(A\hat{E}D) = 90°$

ise x kaç birimdir?

Dik ve Özel Üçgenler

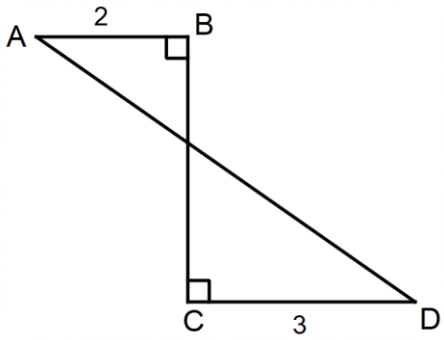
matematikchi.net

12.



ABC üçgeninde $m(B\hat{A}C)=90°$ ise hipotenüs kaç birimdir?

13.



$|AB| \perp |BC|$

$|BC| \perp |CD|$

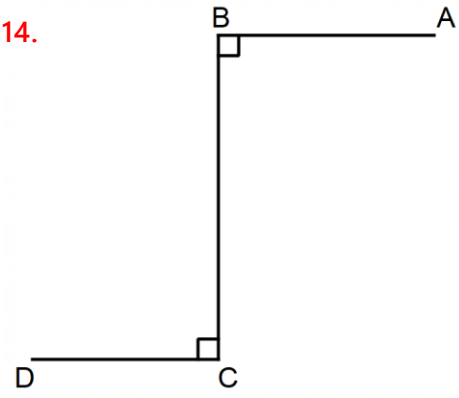
$|AB| = 2$ br

$|CD| = 3$ br

$|BC| = 12$ br

Yukarıda verilenlere göre $[AD]$ kaç birimdir?

14.



$|AB| \perp |BC|$

$|BC| \perp |CD|$

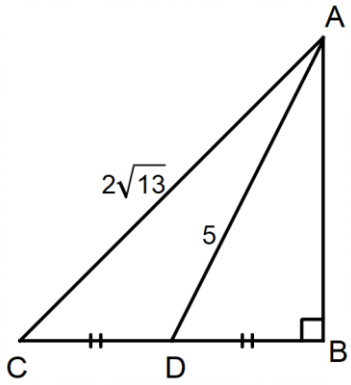
$|AB| = 44$ br

$|CD| = 33$ br

$|BC| = 66$ br

Yukarıda verilenlere göre A ve D noktaları arası en kısa mesafe kaç birimdir?

15.



ABC üçgeninde,

$m(A\hat{B}C) = 90°$

$|CD| = |DB|$

$|AD| = 5$ br

$|AC| = 2\sqrt{13}$ br

$|AB|$ kaç birimdir?

16.

ABC üçgeninde,

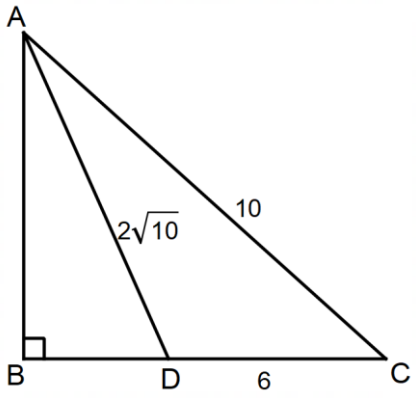
$m(A\hat{B}C) = 90°$

$|AD| = 2\sqrt{10}$ br

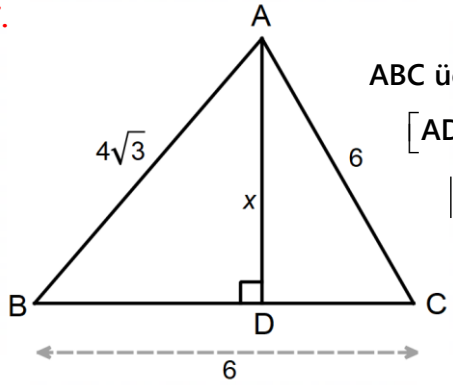
$|AC| = 10$ br

$|CD| = 6$ br

$|BD|$ kaç birimdir?



17.



ABC üçgeninde,

$[AD] \perp [BC]$

$|AB| = 4\sqrt{3}$ br

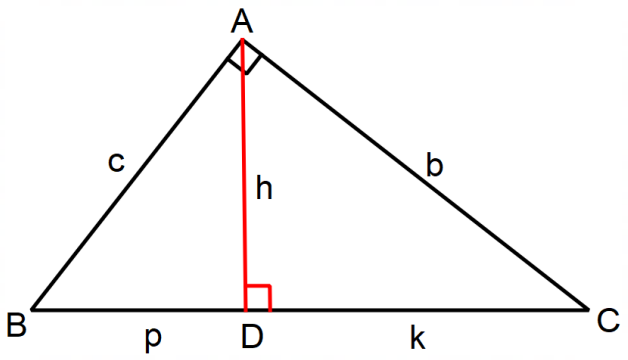
$|AC| = |BC| = 6$ br

Buna göre $|AD|$ kaç birimdir?

12) $24\sqrt{5}$ 13) 13 14) $11\sqrt{85}$ 15) 4 16) 2 17) $4\sqrt{2}$

2- Öklit Formülleri :

Bir dik üçgende dik açıdan karşı kenara dik inilirse öklit formülleri kullanılır.

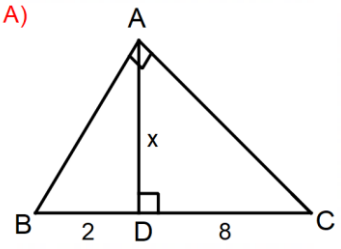


* $h^2 = p \cdot k$
* $c^2 = p \cdot (p+k)$
* $b^2 = k \cdot (p+k)$

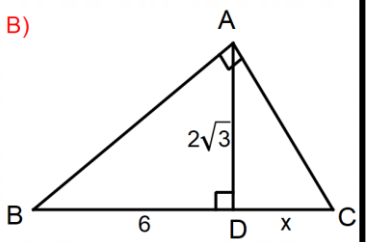
Sorular : $(h^2 = p \cdot k)$

1. Aşağıdaki dik üçgenlerde x uzunlukları kaç birimdir bulunuz?

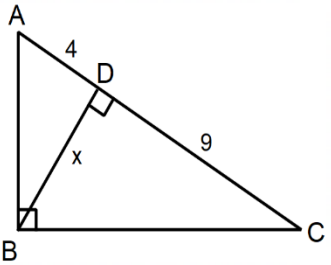
A)



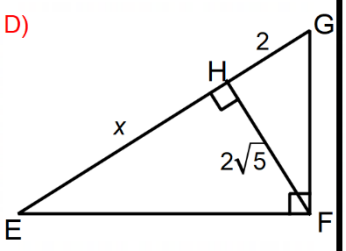
B)



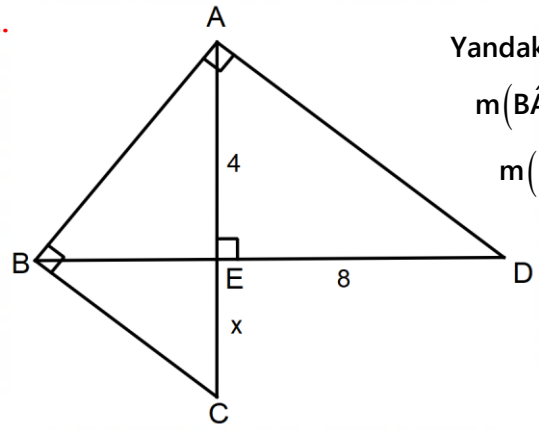
C)



D)



2.



Yandaki şekilde,

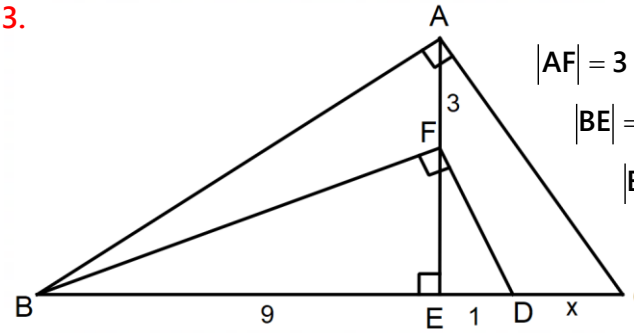
$m(B\hat{A}D) = 90°$

$m(A\hat{E}D) = 90°$

$m(C\hat{B}A) = 90°$

$|AE| = 4$ br $|DE| = 8$ br ise $|CE|$ kaç birimdir?

3.



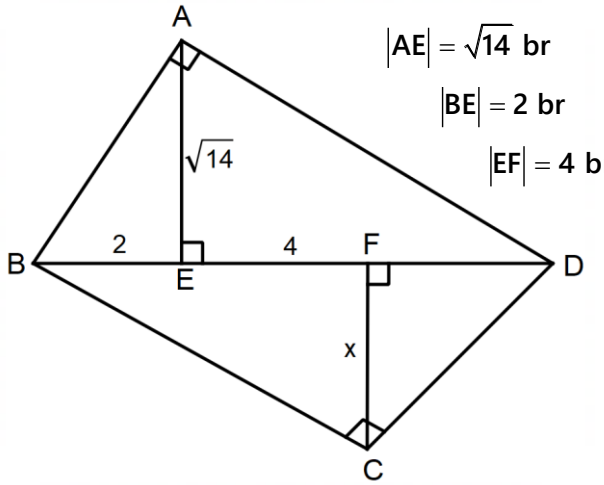
$|AF| = 3$ br

$|BE| = 9$ br

$|ED| = 1$ br

BAC ve BFD dik üçgen, $[AE] \perp [BC]$ ise x kaç birimdir?

4.



$|AE| = \sqrt{14}$ br

$|BE| = 2$ br

$|EF| = 4$ br

BAD ve BCD dik üçgen, $[AE] \perp [BD]$, $[CF] \perp [BD]$ ise x kaç birimdir?

1) A) 4 B) 2 C) 6 D) 10 2) 1 3) 3 4) $3\sqrt{2}$

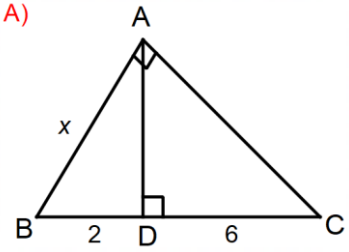
Dik ve Özel Üçgenler

matematikchi.net

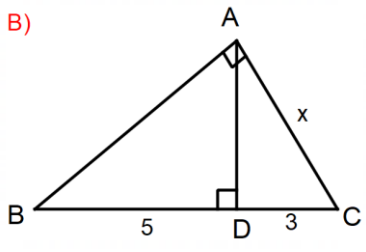
Sorular : $c^2 = p \cdot (p+k)$ ve $b^2 = k \cdot (p+k)$

5. Aşağıdaki dik üçgenlerde x uzunlukları kaç birimdir bulunuz?

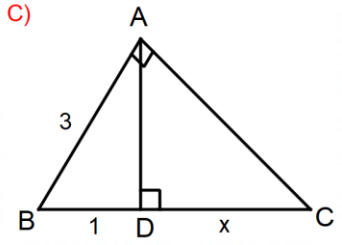
A)



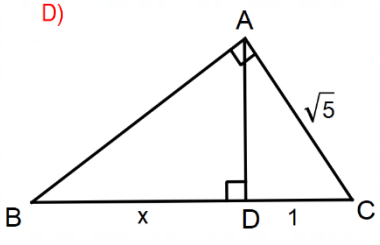
B)



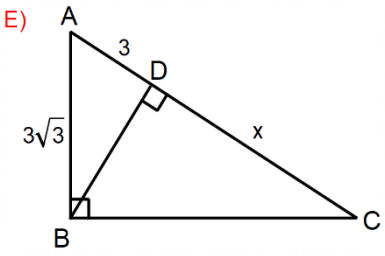
C)



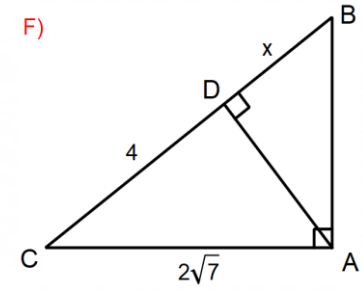
D)



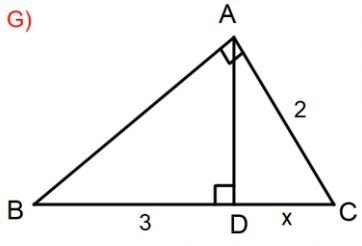
E)



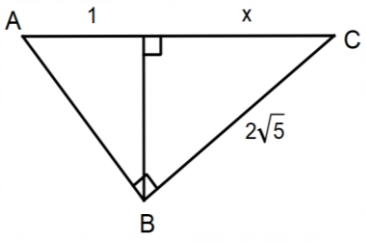
F)



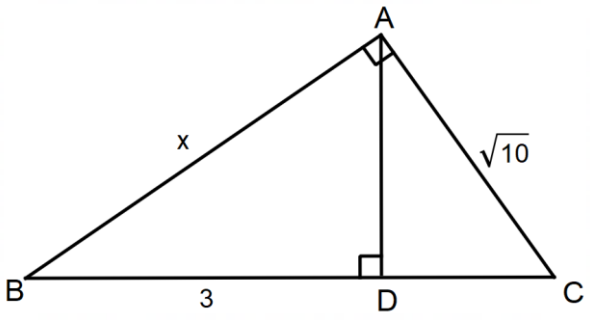
G)



H)



6.

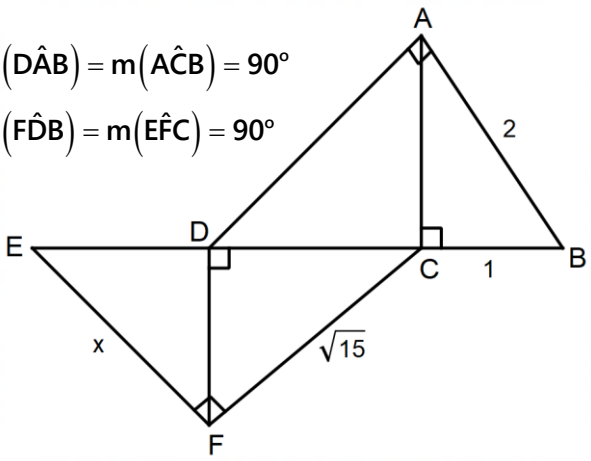


BAC dik üçgeninde $[AD] \perp [BC]$,

$|AC| = \sqrt{10}$ br , $|BD| = 3$ br ise $|AB|$ kaç br dir?

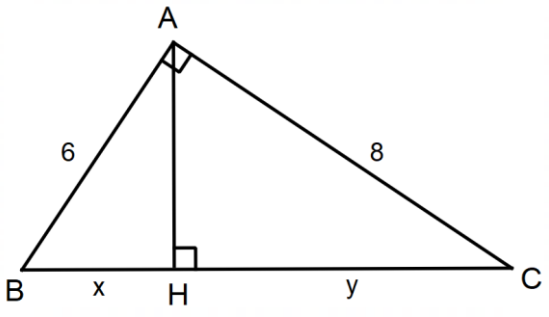
7. $m(D\hat{A}B) = m(A\hat{C}B) = 90°$

$m(F\hat{D}B) = m(E\hat{F}C) = 90°$



Yukarıda verilenlere göre x kaç birimdir?

8.



ABC dik üçgen, $[AH] \perp [BC]$, $|AB| = 6$, $|AC| = 8$ ise x ve y kaçar birimdir?

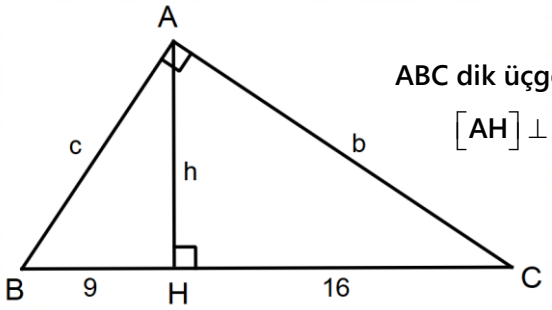
5) A) 4 B) $2\sqrt{6}$ C) 8 D) 4 E) 6 F) 3 G) 1 H) 4 6) $\sqrt{15}$ 7) $\sqrt{10}$ 8) x = 3,6 y = 6,4

Dik ve Özel Üçgenler

matematikchi.net

Sorular : Tüm öklit formülleri

9.

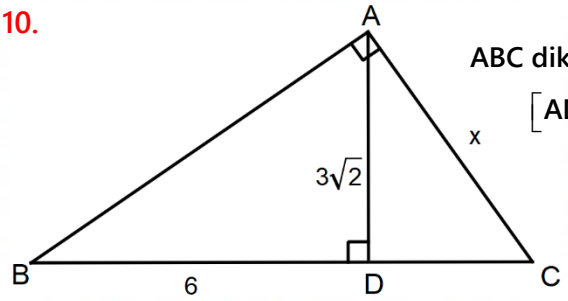


ABC dik üçgeninde

$[AH] \perp [BC]$

c, h, b uzunlukları kaçar birimdir?

10.

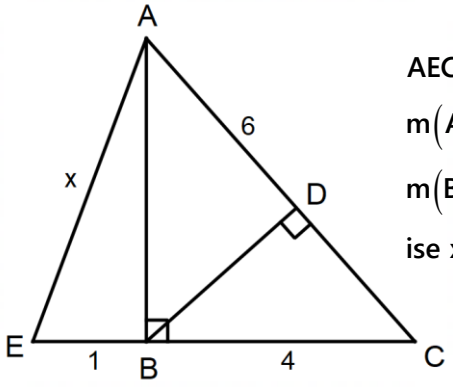


ABC dik üçgeninde

$[AD] \perp [BC]$

$[AC]$ kaç birimdir?

11.



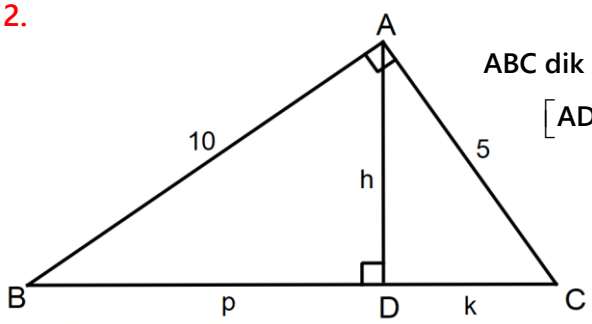
AEC üçgeninde,

$m(A\hat{B}C) = 90°$

$m(B\hat{D}C) = 90°$

ise x kaç birimdir?

12.



ABC dik üçgeninde

$[AD] \perp [BC]$

p, h, k uzunlukları kaçar birimdir?

13.

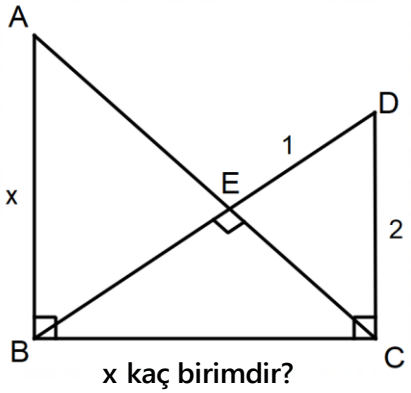
$m(A\hat{B}C) = 90°$

$m(B\hat{C}D) = 90°$

$[BD] \perp [AC]$

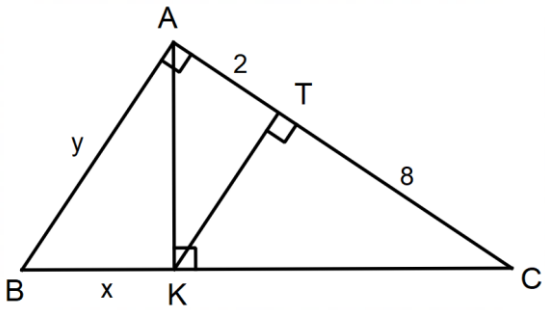
$|ED| = 1$

$|CD| = 2$



x kaç birimdir?

14.



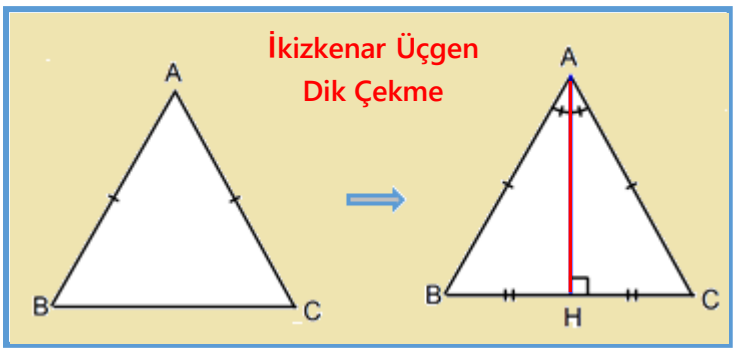
BAC dik üçgeninde, $m(A\hat{K}C) = 90°$ $m(K\hat{T}C) = 90°$

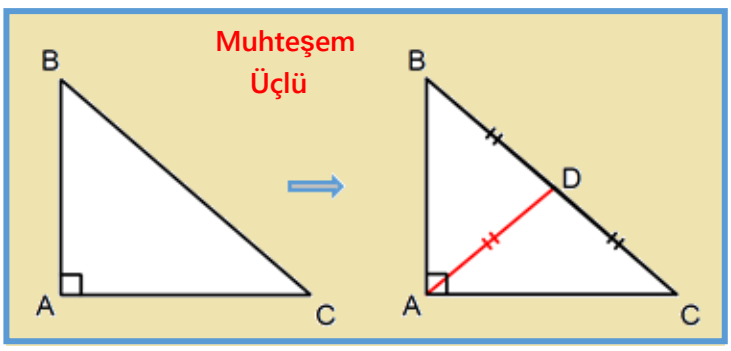
$|AT| = 2$ br $|TC| = 8$ br

ise x ve y kaç birimdir?

Dik ve Özel Üçgenler

matematikchi.net





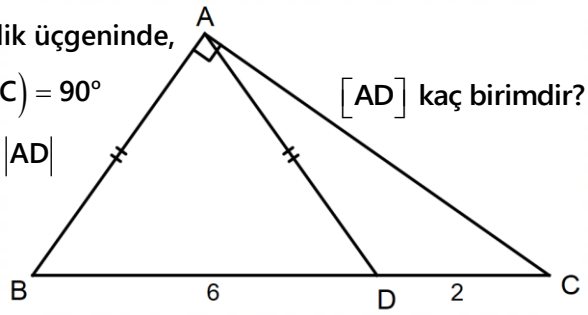
Sorular :

15. BAC dik üçgeninde,

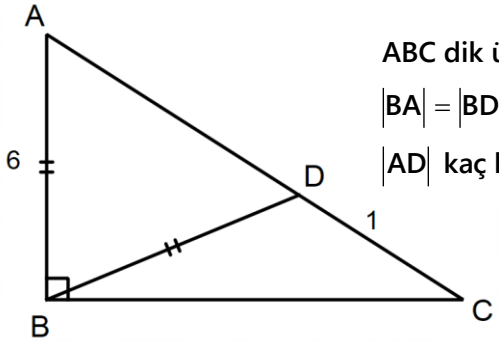
$m(\widehat{BAC}) = 90°$

$|AB| = |AD|$

$[AD]$ kaç birimdir?



16.

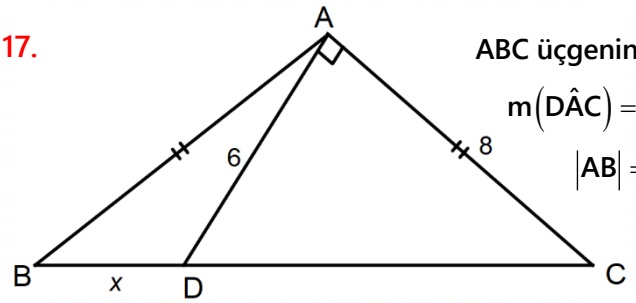


ABC dik üçgeninde,

$|BA| = |BD|$

$|AD|$ kaç birimdir?

17.



ABC üçgeninde,

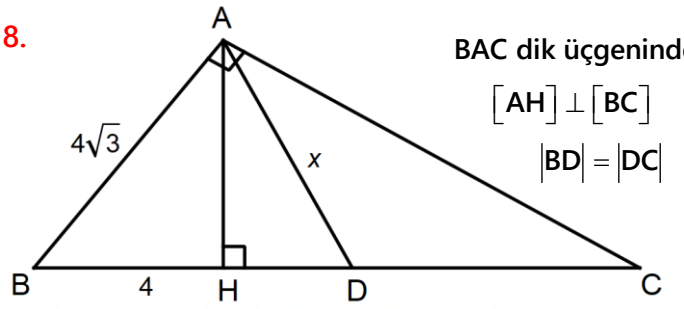
$m(\widehat{DAC}) = 90°$

$|AB| = |AC|$

Yukarıda verilenlere göre x kaç birimdir?

Sorular :

18.



BAC dik üçgeninde

$[AH] \perp [BC]$

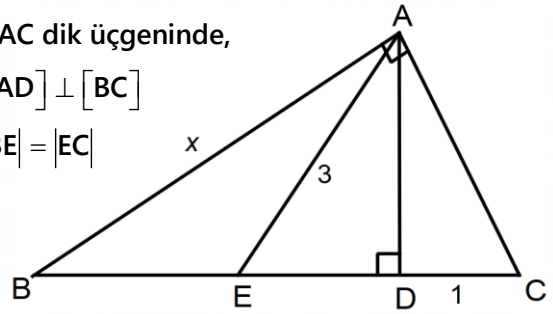
$|BD| = |DC|$

$|AD|$ kaç birimdir?

19. BAC dik üçgeninde,

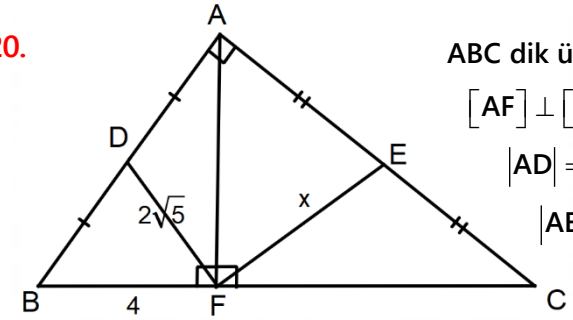
$[AD] \perp [BC]$

$|BE| = |EC|$



x kaç birimdir?

20.



ABC dik üçgeninde

$[AF] \perp [BC]$

$|AD| = |DB|$

$|AE| = |EC|$

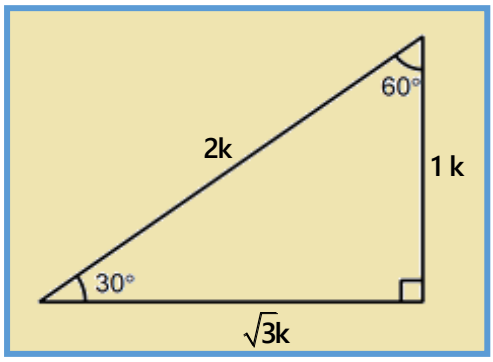
$[FE]$ kaç birimdir?

Video Anlatım

Dik ve Özel Üçgenler

matematikchi.net

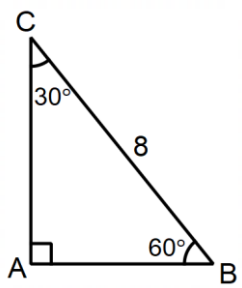
3A – Özel Açılı Üçgenler (30° - 60° - 90° Üçgeni) :



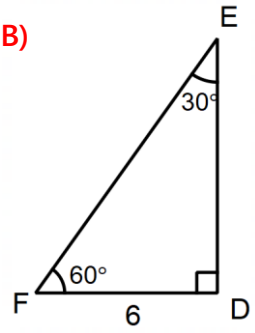
Sorular :

1. Aşağıdaki üçgenlerin kenar uzunluklarını bulun.

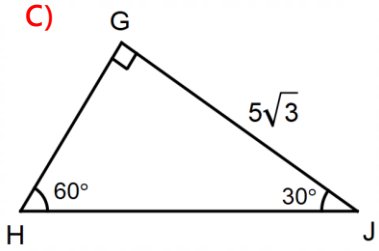
A)



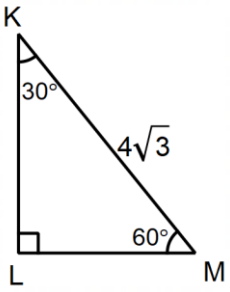
B)



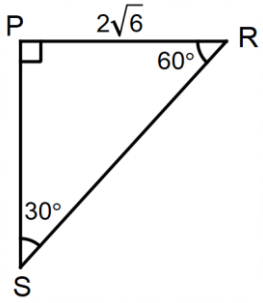
C)



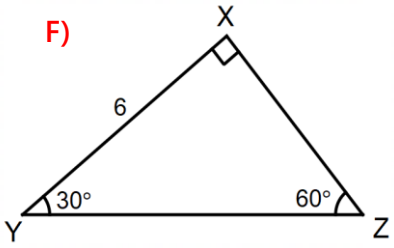
D)



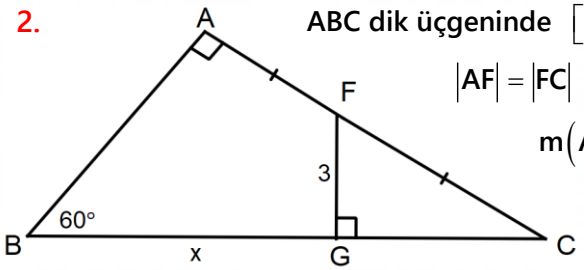
E)



F)



2.



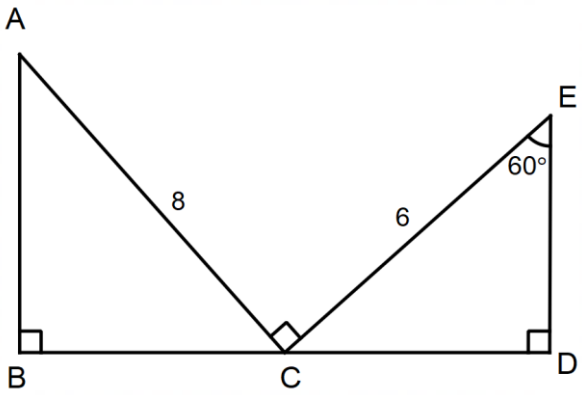
ABC dik üçgeninde $[FG] \perp [BC]$

$|AF| = |FC|$

$m(A\hat{B}C) = 60°$

$[BG]$ kenarı kaç birimdir?

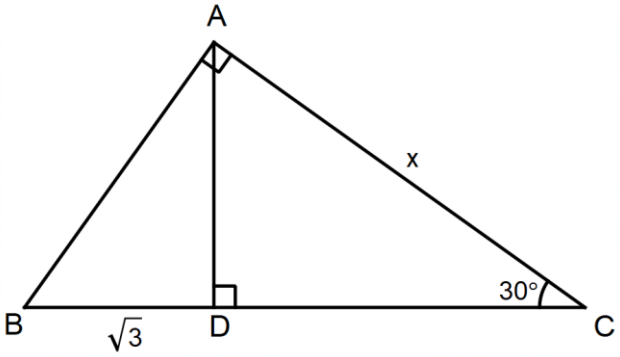
3.



$m(A\hat{B}D) = m(A\hat{C}E) = m(B\hat{D}E) = 90°$

$m(C\hat{E}D) = 60°$ ise $|BD|$ kaç birimdir?

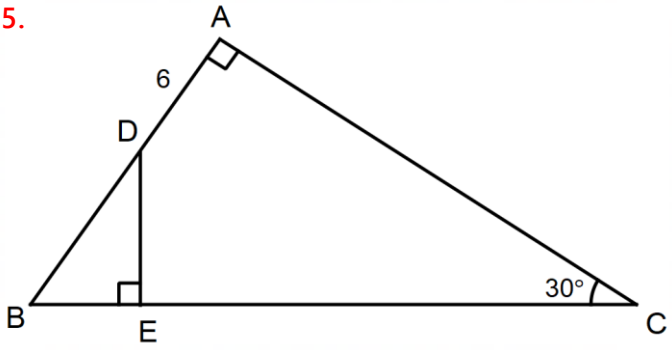
4.



BAC dik üçgeninde $[AD] \perp [BC]$ $m(A\hat{C}B) = 30°$

Buna göre $|AC|$ kaç birimdir?

5.



ABC dik üçgeninde,

$m(B\hat{C}A) = 30°$ $|AD| = 6$ br $|CE| = 5.|BE|$

$|AC|$ kaç birimdir?

1) A) $|AB| = 4$ B) $|EF| = 12$ C) $|HG| = 5$ D) $|ML| = 2\sqrt{3}$ E) $|PS| = 6\sqrt{2}$ F) $|XZ| = 2\sqrt{3}$ 2) $5\sqrt{3}$ 3) $4 + 3\sqrt{3}$ 4) 6 5) $18\sqrt{3}$

$|AC| = 4\sqrt{3}$ $|ED| = 6\sqrt{3}$ $|HJ| = 10$ $|KL| = 6$ $|RS| = 4\sqrt{6}$ $|YZ| = 4\sqrt{3}$

Dik ve Özel Üçgenler

matematikchi.net

6.

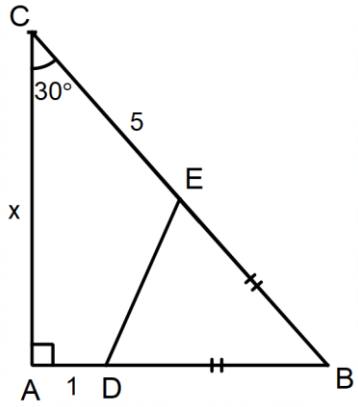
CAB dik üçgeninde,

$[BD] = [BE]$

$m(A\hat{C}B) = 30°$

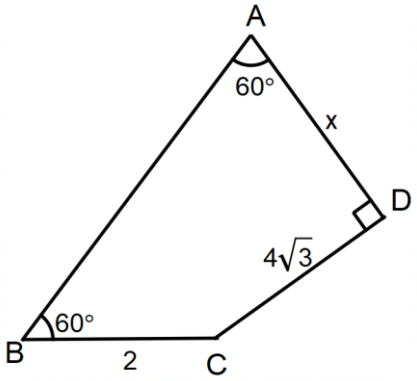
$|AD| = 1$ br

$|CE| = 5$ br



Yukarıda verilenlere göre $|AC|$ kaç birimdir?

7.

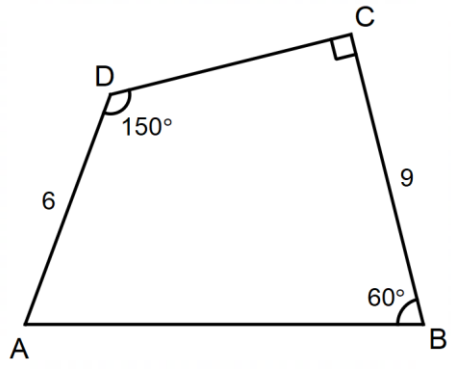


ABCD dörtgeninde,

$m(A\hat{B}C) = m(B\hat{A}D) = 60°$ $m(C\hat{D}A) = 90°$

$|BC| = 2$ br $|CD| = 4\sqrt{3}$ br $|AD|$ kaç birimdir?

8.

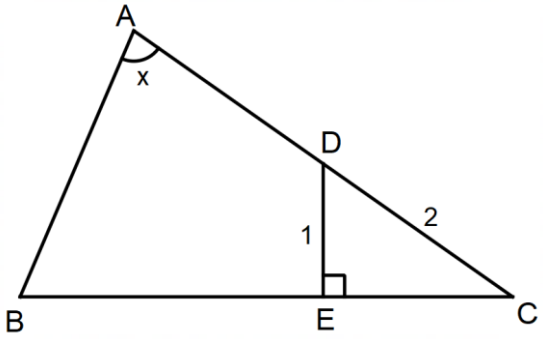


ABCD dörtgeninde,

$m(A\hat{B}C) = 60°$ $m(D\hat{C}B) = 90°$ $m(A\hat{D}C) = 150°$

$|AD| = 6$ br $|BC| = 9$ br $|AB|$ kaç birimdir?

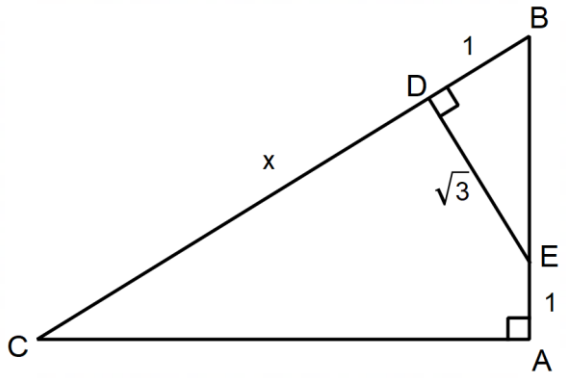
9.



ABC ikizkenar üçgeninde $|CA| = |CB|$,

$|CD| = 2$ br $|DE| = 1$ br ise x açısı kaç derecedir?

10.

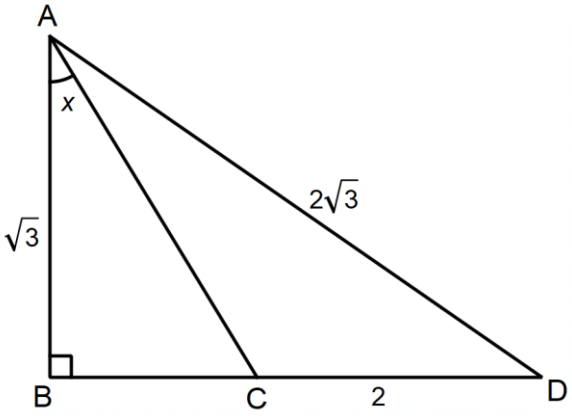


ABC dik üçgeninde, $m(B\hat{D}E) = 90°$

$|BD| = |AE| = 1$ br $|DE| = \sqrt{3}$ br

$|CD|$ kaç birimdir?

11.

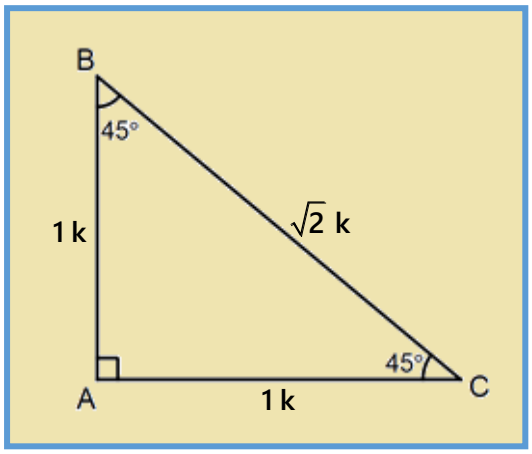


ABD dik üçgeninde,

$|AB| = \sqrt{3}$ br $|CD| = 2$ br $|AD| = 2\sqrt{3}$ br

$m(B\hat{A}C)$ kaç derecedir?

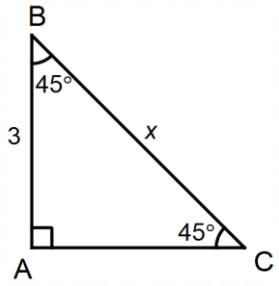
3B – Özel Açılı Üçgenler (45° - 90° - 45° Üçgeni)



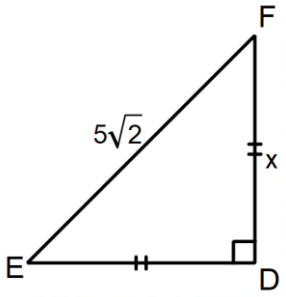
Sorular :

1. Aşağıdaki üçgenlerde x uzunluklarını bulun.

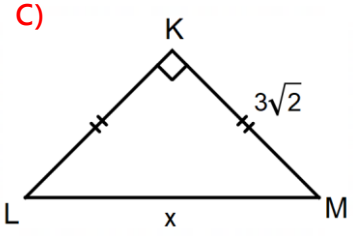
A)



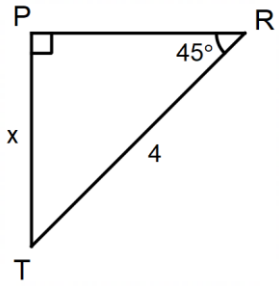
B)



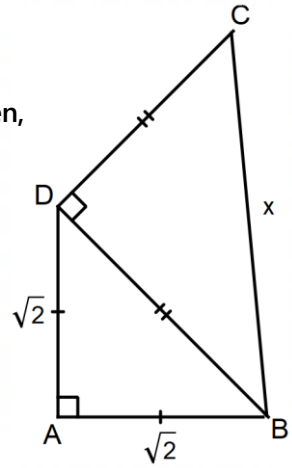
C)



D)



2.



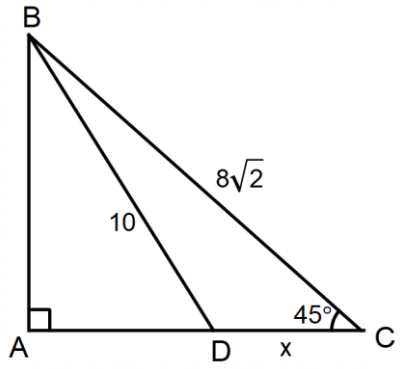
DAB ve CDB dik üçgen,

$|AD| = |AB| = \sqrt{2}$

$|DC| = |DB|$

$|BC|$ kaç birimdir?

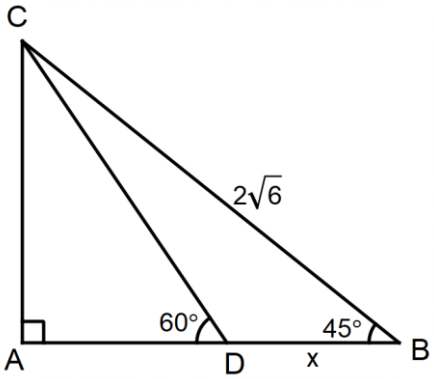
3.



BAC dik üçgeninde, $m(A\hat{C}B)=45°$,

$|BD| = 10$ br, $|BC| = 8\sqrt{2}$ br ise $|CD|$ kaç birimdir?

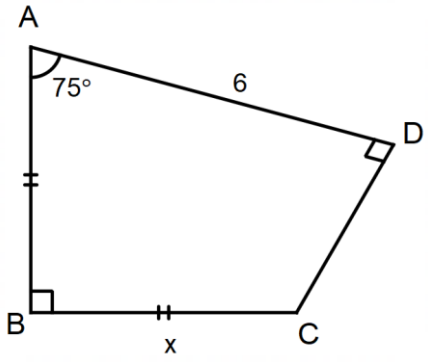
4.



CAB dik üçgeninde, $m(A\hat{B}C)=45°$, $m(C\hat{D}A)=60°$

$|CB| = 2\sqrt{6}$ br ise $|BD|$ kaç birimdir?

5.

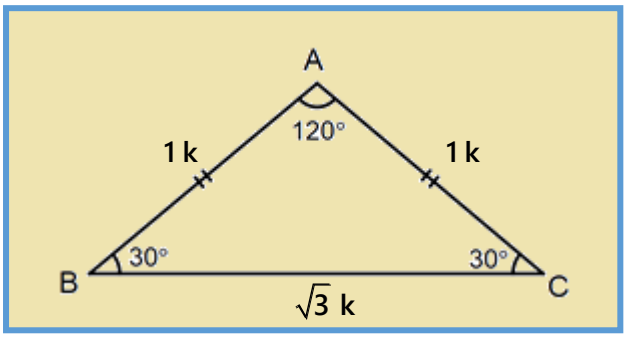


ABCD dörtgeninde, $m(A\hat{B}C)=m(C\hat{D}A)=90°$

$m(B\hat{A}D)=75°$ $|AD| = 6$ br ise $|BC|$ kaç birimdir?

1) A) $3\sqrt{2}$ B) 5 C) 6 D) $2\sqrt{2}$ 2) $2\sqrt{2}$ 3) 2 4) $2\sqrt{3}-2$ 5) $2\sqrt{6}$

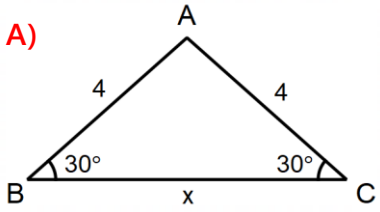
3C – Özel Açılı Üçgenler (30° - 120° - 30° Üçgeni)



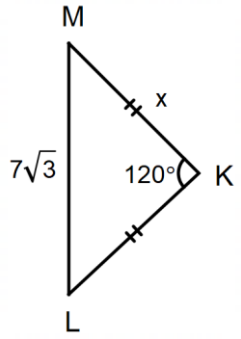
Sorular :

1. Aşağıdaki üçgenlerde x uzunluklarını bulun.

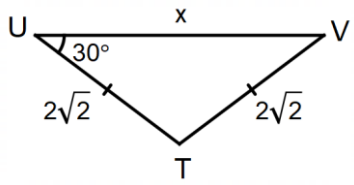
A)



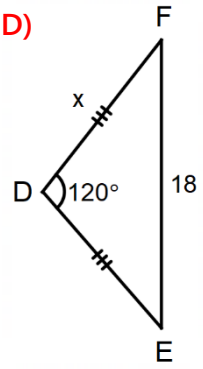
B)



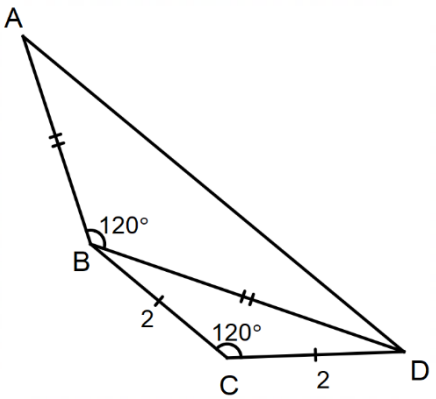
C)



D)



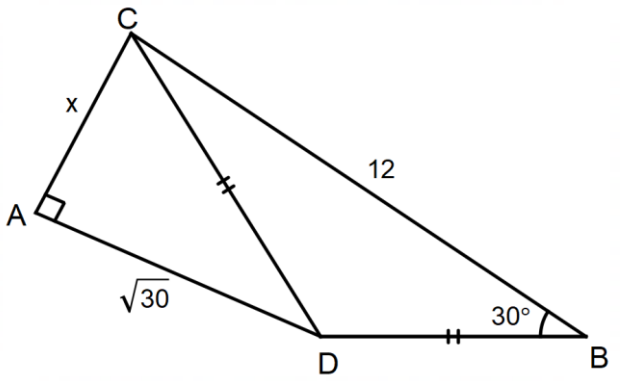
2.



ABCD dörtgeninde, $m(B\hat{C}D)=m(A\hat{B}D)=120°$

$|CB|=|CD|=2$ br $|BA|=|BD|$ ise $|AD|$ kaç birimdir?

3.

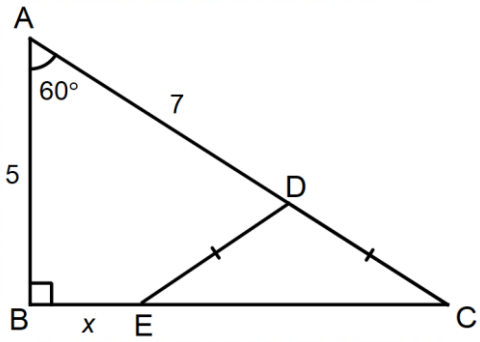


ADBC dörtgeninde, $m(D\hat{B}C)=30°$, $|DB|=|DC|$

$|BC|=12$ br , $|AD|=\sqrt{30}$ br ise

$|AC|$ kaç birimdir?

4.

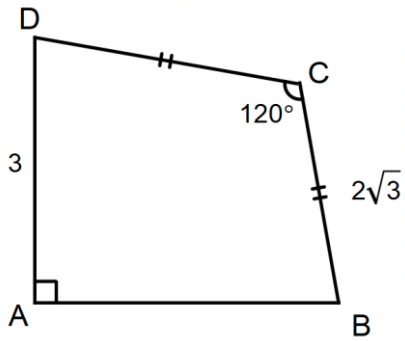


ABC dik üçgeninde, $m(B\hat{A}C)=60°$

$|DE|=|DC|$ $|AB|=5$ br $|AD|=7$ br ise

$|BE|$ kaç birimdir?

5.



ABCD dörtgeninde, $m(B\hat{C}D)=120°$, $m(B\hat{A}D)=90°$

$|CD|=|CB|=2\sqrt{3}$ br $|AD|=3$ br ise

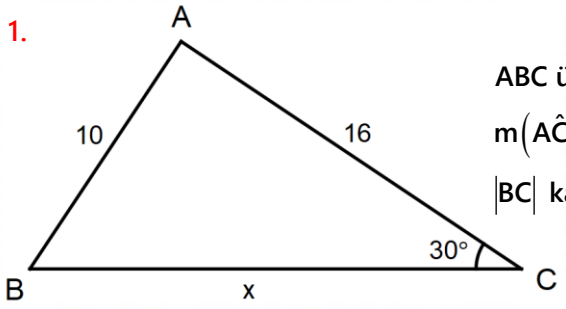
$m(A\hat{D}C)$ kaç derecedir?

1) A) $4\sqrt{3}$ B) 7 C) $2\sqrt{6}$ D) $6\sqrt{3}$ 2) 6 3) $3\sqrt{2}$ 4) $2\sqrt{3}$ 5) 90°

4A – Dik Çekerek Özel Üçgen Oluşturma (İçeriden):

Sorular :

1.

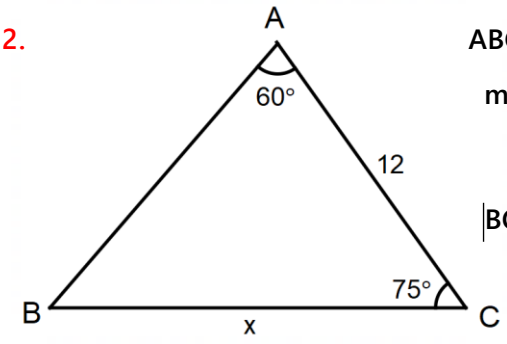


ABC üçgeninde,

$m(A\hat{C}B)=30°$

$|BC|$ kaç birimdir?

2.



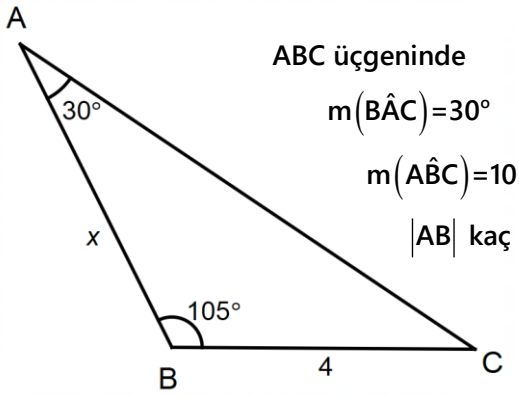
ABC üçgeninde ,

$m(B\hat{A}C)=60°$

$m(A\hat{C}B)=75°$

$|BC|$ kaç birimdir?

3.



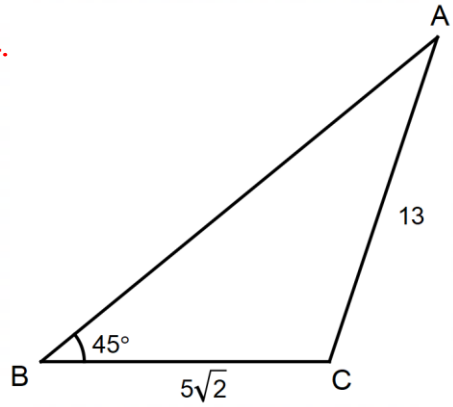
ABC üçgeninde

$m(B\hat{A}C)=30°$

$m(A\hat{B}C)=105°$

$|AB|$ kaç birimdir?

4.



ABC üçgeninde

$m(A\hat{B}C)=45°$

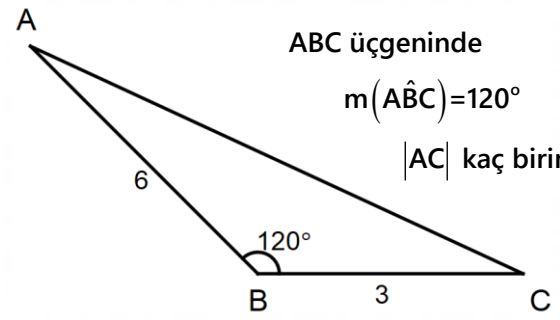
$|AB|$ kaç birimdir?

1) $6+8\sqrt{3}$ 2) $6\sqrt{6}$ 3) $4\sqrt{2}$ 4) 17

4B – Dik Çekerek Özel Üçgen Oluşturma (Dışarıdan):

Sorular :

1.

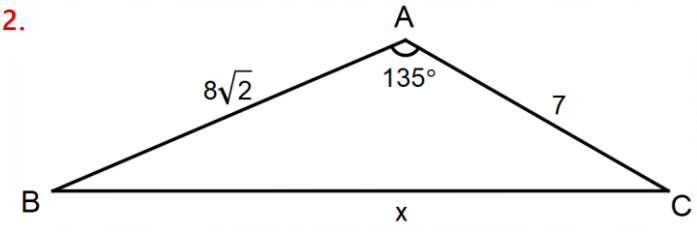


ABC üçgeninde

$m(A\hat{B}C)=120°$

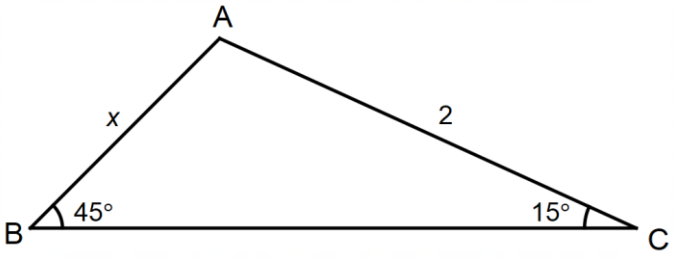
$|AC|$ kaç birimdir?

2.



ABC üçgeninde, $m(B\hat{A}C)=135°$ ise x kaçtır?

3.

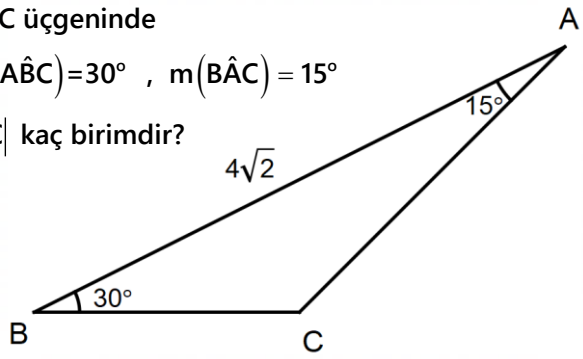


ABC üçgeninde, $m(A\hat{B}C)=45°$, $m(A\hat{C}B)=15°$ ise x kaçtır?

4. ABC üçgeninde

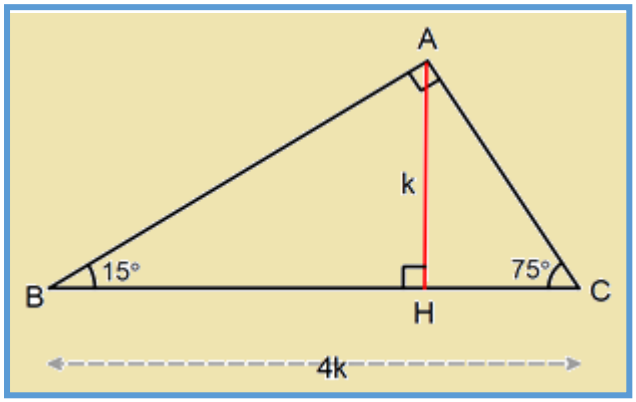
$m(A\hat{B}C)=30°$, $m(B\hat{A}C)=15°$

$|AC|$ kaç birimdir?



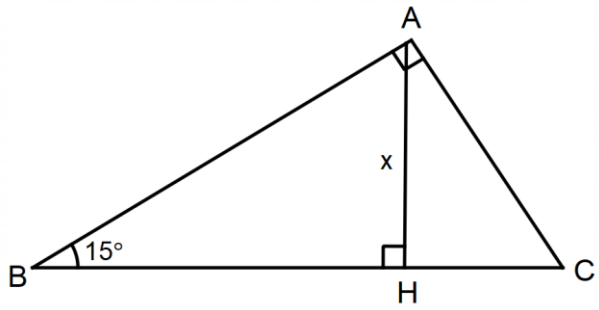
1) $3\sqrt{7}$ 2) 17 3) $\sqrt{3}-1$ 4) 4

5 – Özel Açılı Üçgenler (15° - 90° - 75° Üçgeni) :



Sorular :

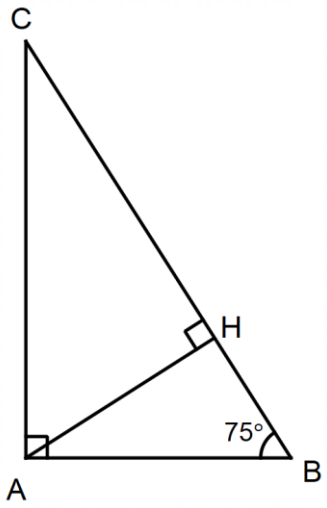
1.



BAC dik üçgeninde $[AH] \perp [BC]$

$|BC| = 12$ br ise x kaça eşittir?

2.



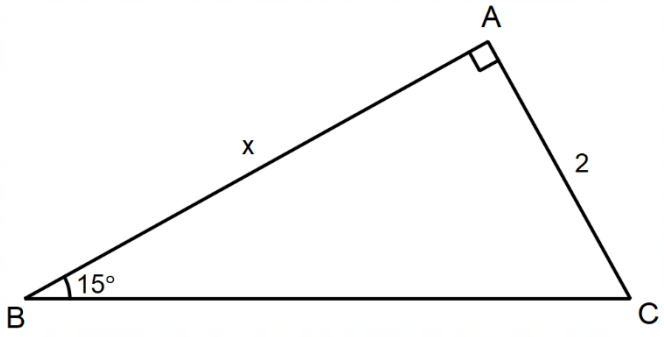
ABC dik üçgeninde $[AH] \perp [BC]$

$|AH| + |BC| = 20$ br ise $|BC|$ kaça eşittir?

15° – 90° – 75° üçgeninde dik kenarlar arasındaki ilişki :

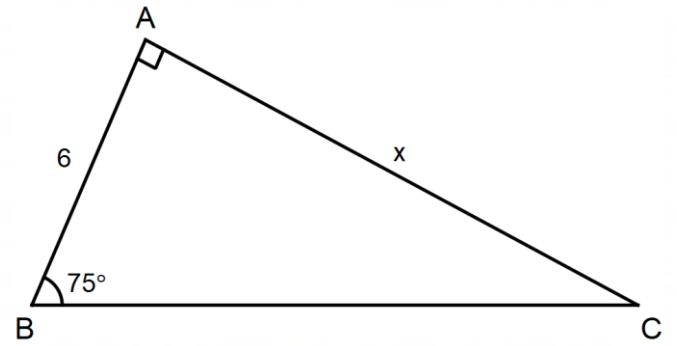
Sorular :

3.



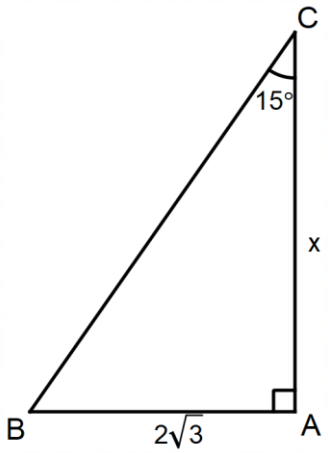
ABC dik üçgeninde , $m(\hat{ABC}) = 15°$ ise x kaça eşittir?

4.



ABC dik üçgeninde , $m(\hat{ABC}) = 75°$ ise x kaça eşittir?

5.



ABC dik üçgeninde ,

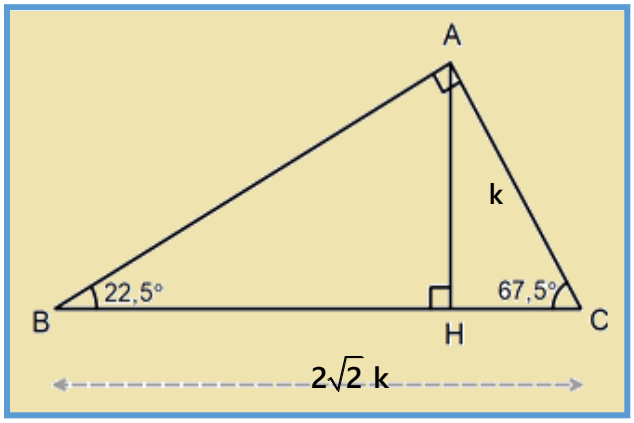
$m(\hat{BCA}) = 15°$

$|AB| = 2\sqrt{3}$ br

$|AC|$ kaç birimdir?

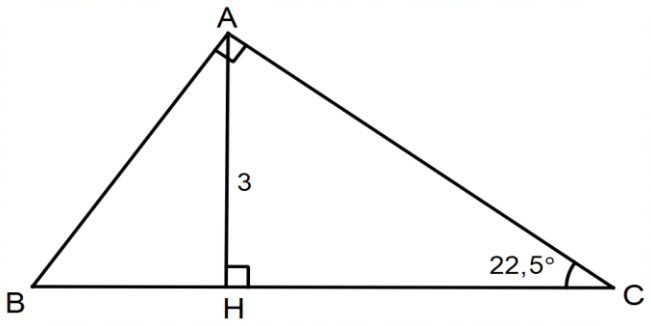
1) 3 2) 16 3) $2\sqrt{3}+4$ 4) $6\sqrt{3}+12$ 5) $4\sqrt{3}+6$

6 - Özel Açılı Üçgenler (22,5° - 90° - 67,5° Üçgeni) :



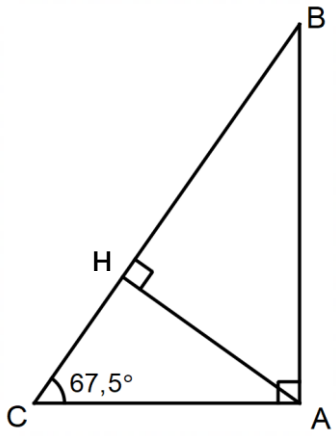
Sorular :

1.



ABC dik üçgeninde $|BC|$ kaça eşittir?

2.



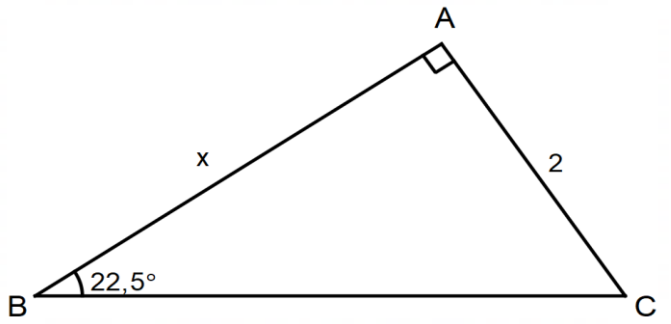
BAC dik üçgeninde , $|BC| = 20$ br ise

$|AH|$ kaç birimdir?

22,5° – 90° – 67,5° üçgeninde dik kenarlar arasındaki ilişki :

Sorular :

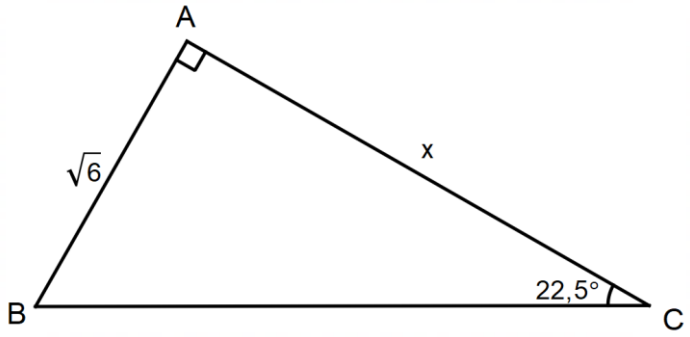
3.



ABC dik üçgeninde , $m(A\hat{B}C) = 22,5°$ ise

$|AB|$ kaça eşittir?

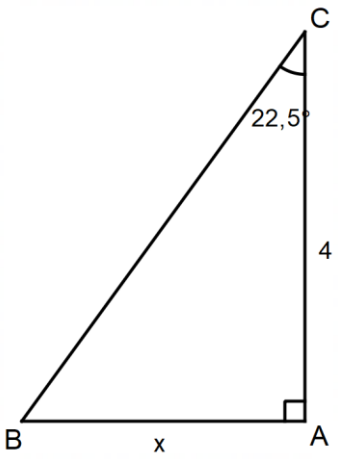
4.



ABC dik üçgeninde , $m(A\hat{C}B) = 22,5°$ ise

$|AC|$ kaça eşittir?

5.



ABC dik üçgeninde ,

$m(A\hat{C}B) = 22,5°$ ise

$|AB|$ kaça eşittir?

1) $6\sqrt{2}$ 2) $5\sqrt{2}$ 3) $2+2\sqrt{2}$ 4) $2\sqrt{3}+\sqrt{6}$ 5) $4\sqrt{2}-4$