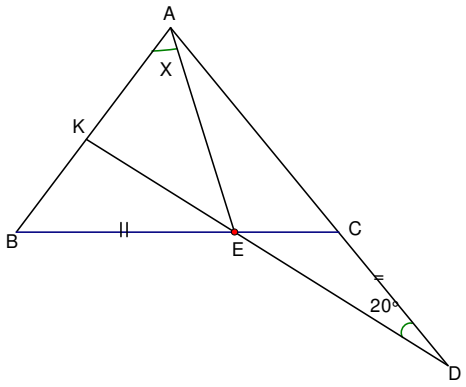
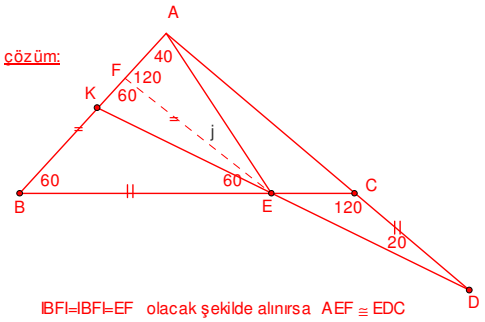
SORU-1)



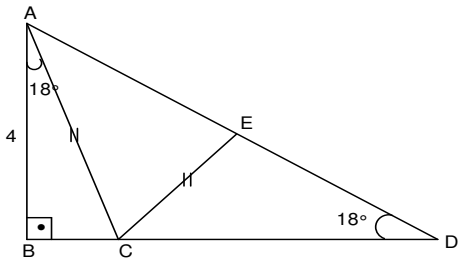
ABC bir eşkenar üçgen, m(EDC)=20 ve |BE|=|CD| ise m(KAE)=? kaç derecedir?

çözüm:



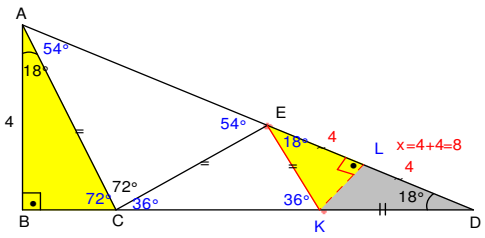
|BF|=|BF|=|EF| olacak şekilde alınırsa AEF ≅ EDC üçgenleri olur. O halde m(KAE)=40° bulunur.

SORU-2)



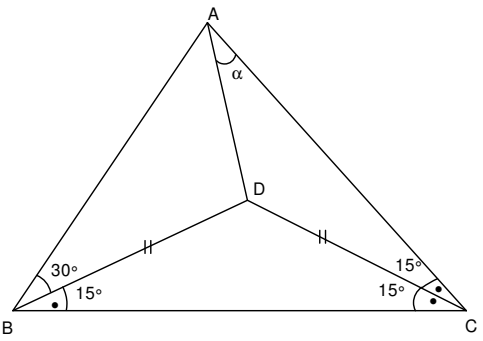
Şekilde AC = EC , AB =4 ve (BAC)=(BDA)=18° veriliyor. Buna göre ED =x kaçtır?

ÇÖZÜM:



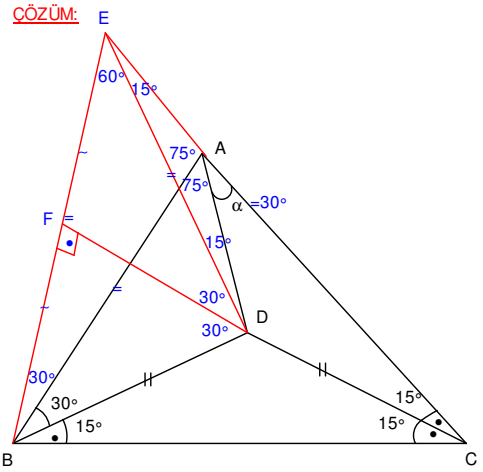
18° olacak şekilde |EK| çizilirse EKD ikizkenar üçgen olur. |KL| dikmesi çizilirse |EL|=|LD| olur. |AC|=|EC|=|EK|=|KD| den ABC≅ELK olduğu görülür. x=|ED|=2.|EL| ise x=2.4=8 bulunur.

SORU-3)

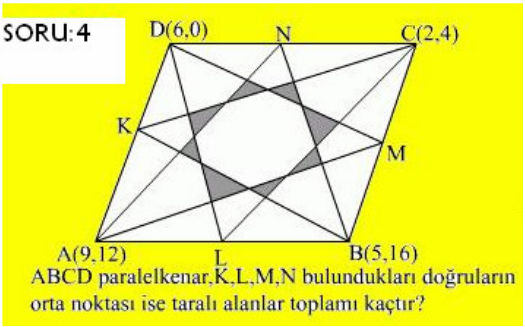


Şekilde BD = DC dir. Verilenlere göre m(DAC)=α kaçtır?

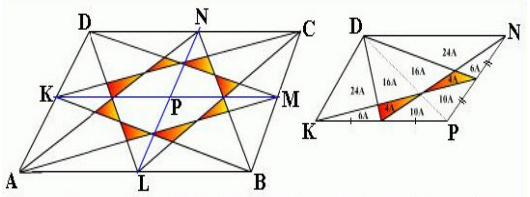
ÇÖZÜM:



Şekilde doğrusal |DF| ve |EA| çizilirse oluşan BDE eşkenar üçgen , |BF|=|EF| ve BE⊥CF olur. Açılar hesaplanırsa BDA ve AED farklı iki ikizkenar üçgen olur. α=180°-(75°+75°)=30° bulunur.

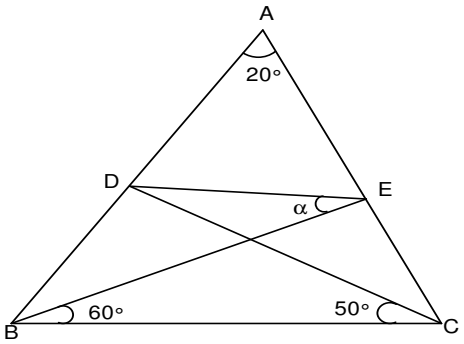


ÇÖZÜM:



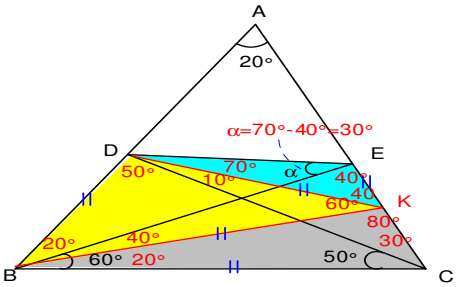
Paralelkenar, NL ve KM doğrularıyla 4 simetrik şekle ayrılır... Sağdaki şekilden de görülebileceği üzere taralı alanlar toplamı paralelkenarın 1/15'idir...Paralelkenarın köşe koordinatları bilindiğinden alanı bulunup, 1/15'i hesaplanırsa cevap bulunur...

SORU-5)



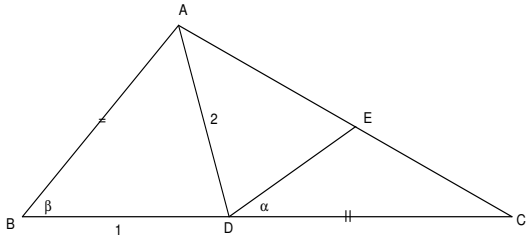
AB = AC dir. Şekil üzerinde verilenlere göre m(BED)=? kaç derecedir?

ÇÖZÜM:



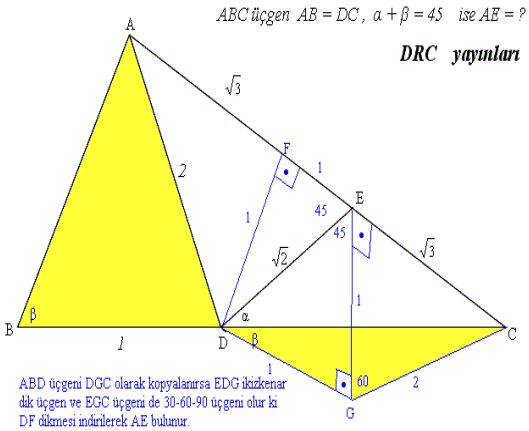
Şekilde BK ve KD çizilirse oluşan BKC üçgeni ikizkenar, BKD üçgeni eşkenar üçgen ve KDE üçgeni ikizkenar oldukları görülür. KDE üçgeninin taban açısının 70° ve α=70°-40°=30° bulunur.

SORU-6)



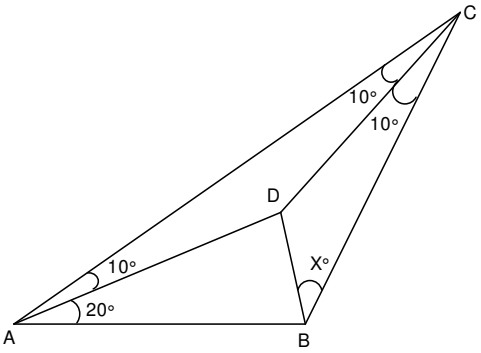
ABC üçgen |AB|=|DC| ve α+β=45° ise |AE|=? kaçtır?

ÇÖZÜM:



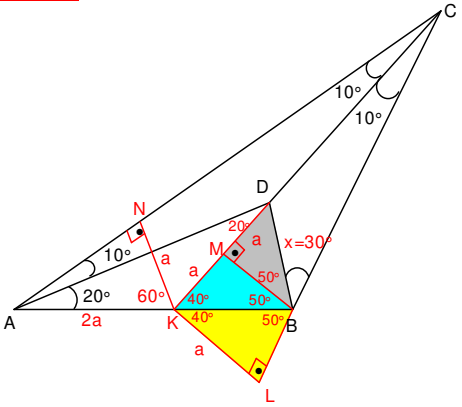
ABD üçgeni DGC olarak kopyalanırsa EDG ikizkenar dik üçgen ve EGC üçgeni de 30-60-90 üçgeni olur ki DF dikmesi indirilerek AE bulunur.

SORU-7)



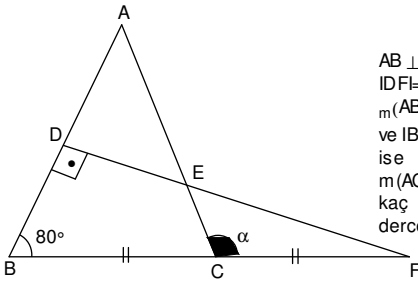
Şekilde verilenlere göre m(DBC)=X kaçtır?

ÇÖZÜM:



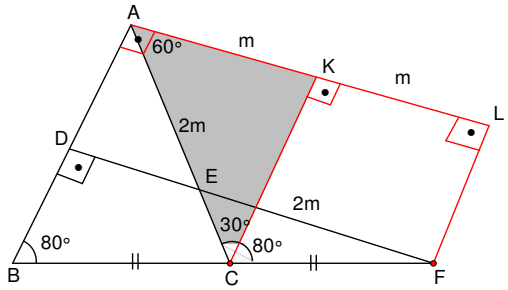
IDKI uzatılır ve açıortay özelliğinden |KL|=|KN|=a dikmeleri eşittir. AKN 30-60-90 üçgenidir. m(ADK)=20° ve m(DKB)=40° dir. AKD ikizkenar üçgendir. |MB| çizilirse KLB - KMB - DMB üçgenleri eş üçgenlerdir. Bu durumda x=30° bulunur.

SORU–8)



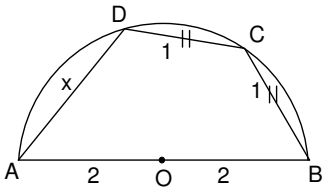
$AB \perp DF$, $|DF|=|AC|$, $m(ABC)=80°$ ve $|BC|=|CF|$ ise $m(ACF)=\alpha$ kaç dercedir?

ÇÖZÜM:



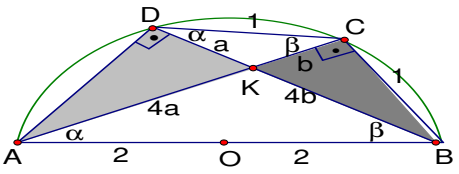
$|AL|=|DF|=|AC|=2m$ alınırsa ve $|CK|$ çizilirse ABFL yamuğunda $|CK|$ orta taban olur. ACK üçgni $30°$-$60°$-$90°$üçgeni olur. $\alpha=30°+80°=110°$ bulunur.

SORU–9)



Şekilde o merkezli çemberde $|DC|=|BC|=1cm$ ise $|AD|=?$ kaçtır?

ÇÖZÜM:



DKA üçgeninde pis. $X=\sqrt{15}a$.....1

CKB üçgeninde pis. $b=\frac{1}{\sqrt{15}}$

ABC üçgeninde pis. $(4a+b)^2=4^2-1^2$

$4a+b=\sqrt{15}$

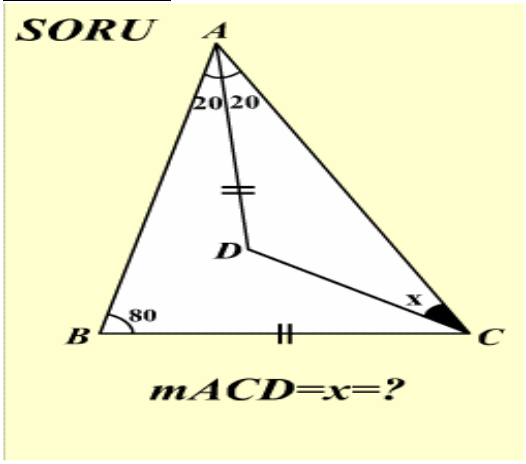
$4a+\frac{1}{\sqrt{15}}=\sqrt{15}$

$4a=\frac{14}{\sqrt{15}}$

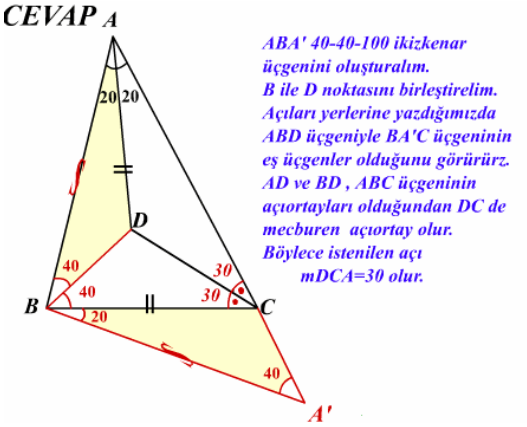
$\frac{\sqrt{15}}{4}.4a=\frac{14}{\sqrt{15}}.\frac{\sqrt{15}}{4}$

$\sqrt{15}.a=\frac{7}{2}\Rightarrow$.....1 den $x=\frac{7}{2}$ bulunur.

SORU–10)



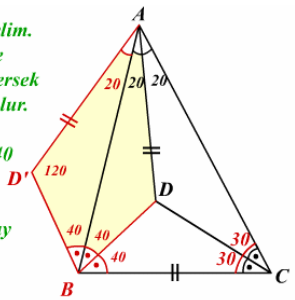
ÇÖZÜM:1



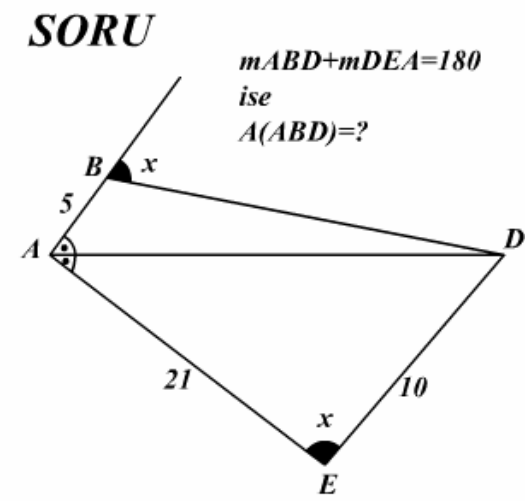
ABA' 40-40-100 ikizkenar üçgenini oluşturalım.
B ile D noktasını birleştirelim.
Açıları yerlerine yazdığımızda ABD üçgeniyle BA'C üçgeninin eş üçgenler olduğunu görürürz.
AD ve BD , ABC üçgeninin açıortayları olduğundan DC de mecburen açıortay olur.
Böylece istenilen açı mDCA=30 olur.

ÇÖZÜM:2

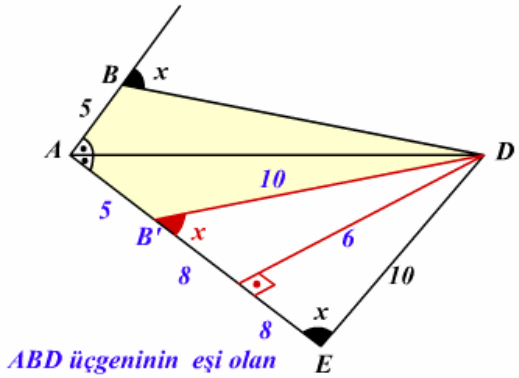
D ile B noktasını birleştirelim.
ADB üçgenininAB ye göre simetriği olan AD'B yi çizersek AD'BC ikizkenar yamuk olur.
BD'//AC yi kullanırsak mABD'=mABD=mCBD=40
ABC üçgeninde BD ve AD açıortay olduğundan CD de açıortay olmak zorunda
Buradan istenilen açı mACD=x=30 bulunur.



SORU–11)

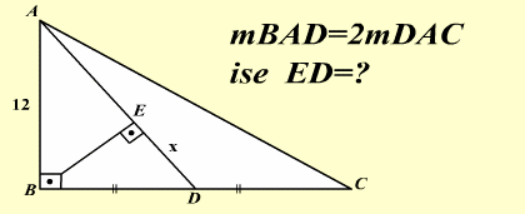


ÇÖZÜM:

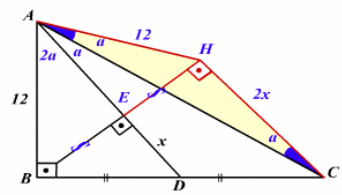


ABD üçgeninin eşi olan
AB'D üçgenini çizelim
B'ED üçgeniikizkenar üçgen olur.
Buradan
A(ABD)=A(AB'D)=5.6/2=15

SORU–12)

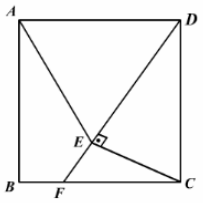


ÇÖZÜM:



BAH ikizkenar üçgenini oluşturalım
H ile C yibirleştirip açıları yerine yazarsak
AHC ikizkenar,
BHC dik üçgen olur
2ED=HC (Orta taban)
AH=HC=2x
12=2x
x=6.

SORU–13)

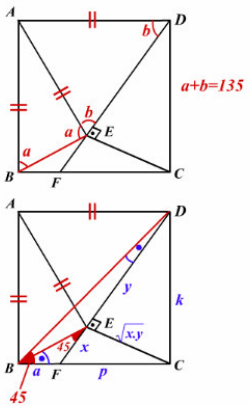


ABCD bir kare.
DF ⊥ EC
AB=AE

EF / ED=?

Fem Geometri

ÇÖZÜM:1



Benzerliği yazalım.

DBF ≈ BEF

$\frac{x}{a} = \frac{a}{x+y}$

$a^2 = x(x+y)$

$k^2 + p^2 = (x+y)^2$ *FCD de pisagor*

$k.p = \sqrt{x.y}(x+y)$ *FCD de alandan*

$a = k - p$

$a^2 = (k-p)^2 = k^2 + p^2 - 2kp$

$a^2 = x(x+y) = k^2 + p^2 - 2kp$

$x(x+y) = (x+y)^2 - 2(x+y)\sqrt{x.y}$

$x = x + y - 2\sqrt{x.y}$

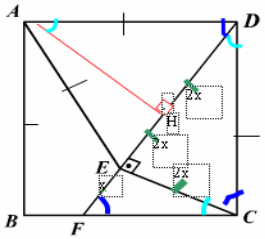
$2\sqrt{xy} = y$

$4xy = y^2$

$4x = y$

$\frac{x}{y} = \frac{1}{4}$

ÇÖZÜM:2

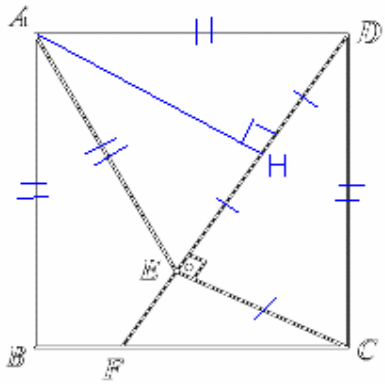


ABCD bir kare.
DF ⊥ EC
AB=AE

EF / ED=?

ADH eştir DEC
DEC benzer EFC
ÇVP:1/4

ÇÖZÜM:3

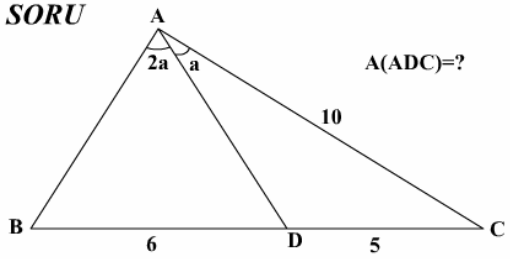


AHD CED üçgenleri eştir.
IECI=1 olsa IDEI=2 olur.
Öklidden IEFI=1/2 olur.

sorulan oran: 1/4

SORU–14)

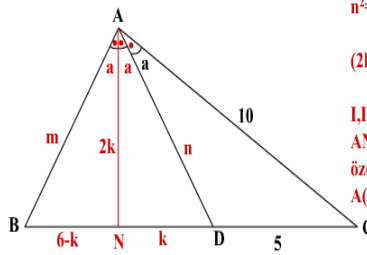
SORU



A(ADC)=?

ÇÖZÜM:

CEVAP



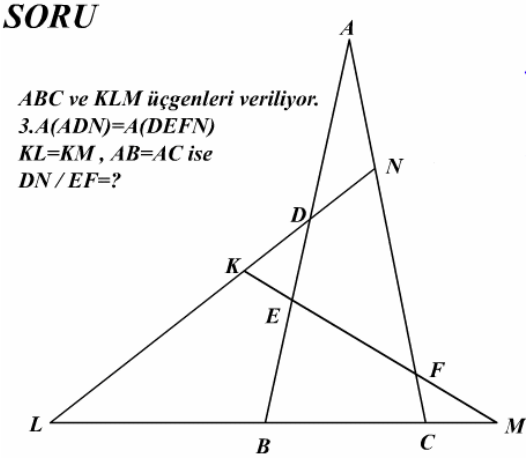
$n^2=20k-5k=15k$ (I)

$(2k)^2=mn-(6-k)k$ (II)

I,II den k=3 buluruz.
ANDC üçgeni 6,8,10
özel üçgeni olur.
A(ADC)=6x5/2=15 olur.

SORU–15)

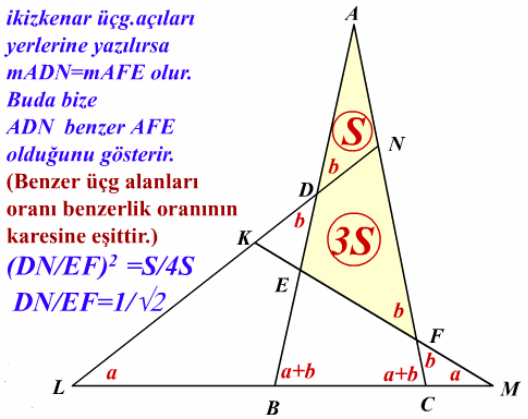
SORU



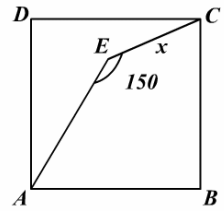
ABC ve KLM üçgenleri veriliyor.
3.A(ADN)=A(DEFN)
KL=KM , AB=AC ise
DN / EF=?

ÇÖZÜM:

ikizkenar üçg.açıları yerlerine yazılırsa mADN=mAFE olur. Buda bize ADN benzer AFE olduğunu gösterir.
(Benzer üçg alanları oranı benzerlik oranının karesine eşittir.)
$(DN/EF)^2 = S/4S$
$DN/EF=1/\sqrt{2}$

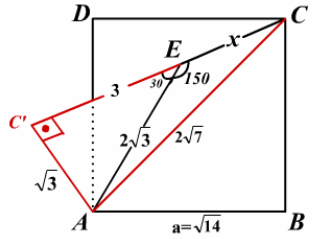


SORU–16)



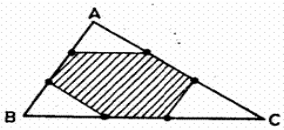
ABCD kare ve A(ABCD)=14
m(AEC)=150
AE=2 KÖK 3
ise EC=x=?

ÇÖZÜM:



A(ABCD=a^2 =14
a=$\sqrt{14}$
EC yi uzatarak
ACC' üçgenini oluşturup, uzunluklar yerine yazıp pisagpr yaparsak
EC=2 olduğu görülür.

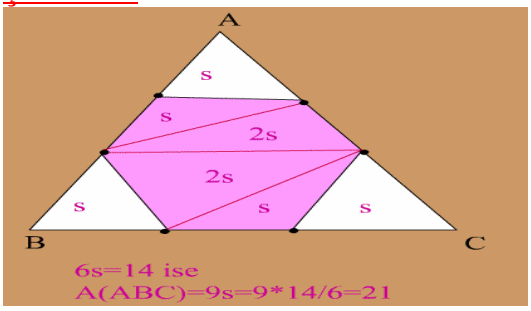
SORU–17)



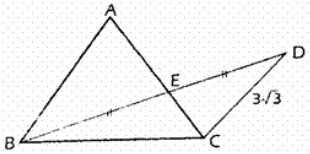
Şekildeki üçgenin her kenarı işaretli noktalarca üç eş parçaya bölünmüştür. Taralı alan 14 cm^2 ise **ABC üçgeninin alanı kaç cm^2 dir?**

A) 17 B) 20 C) 21 D) 22 E) 23

ÇÖZÜM:



SORU–18)

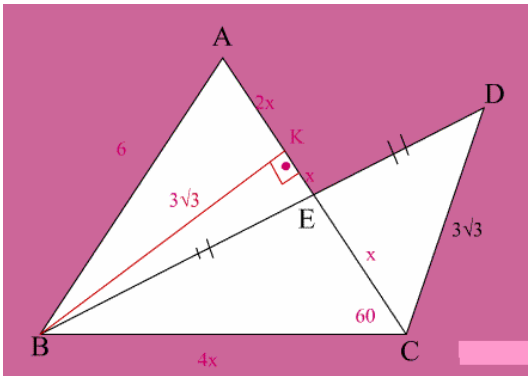


Şekilde Δ ABC eşkenar üçgen, |BE| = |ED| , |AE| = 3 |EC| ve |CD| = $3\sqrt{3}$ olduğuna göre

Alan(ΔABC) kaç cm^2 dir?

A) 9 B) 12 C) $9\sqrt{3}$ D) $12\sqrt{3}$ E) 16

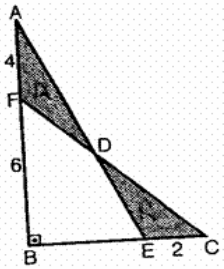
ÇÖZÜM:



|KE|=|EC| ve |BE|=|ED| olması [KB]//[DC] olmasını gerektirir
|BK|=3√3
bulunur.|AB|=6 olup
A(ABC)=36√3/4=9√3

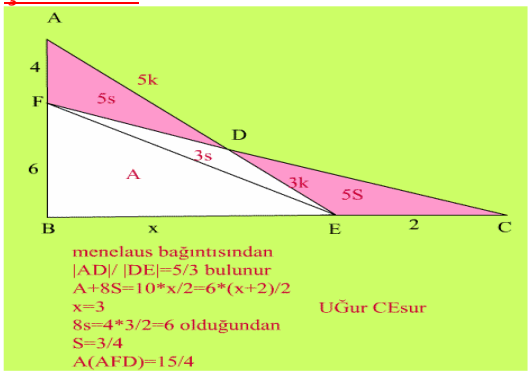
SORU–19)

Şekilde $m(\widehat{B}) = 90°$,
|AF| = 4 cm,
|BF| = 6 cm
ve |EC| = 2 cm dir.
A(AFD) = A(DEC) ise
A(AFD) kaç cm^2 dir?



A) 3 B) $\frac{7}{2}$ C) $\frac{15}{4}$ D) $\frac{5}{2}$ E)

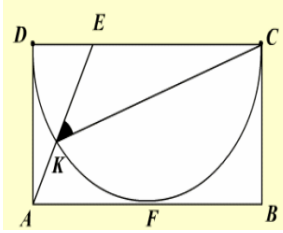
ÇÖZÜM:



menelaus bağıntısından
|AD|/ |DE|=5/3 bulunur
A+8S=10*x/2=6*(x+2)/2
x=3
8s=4*3/2=6 olduğundan
S=3/4
A(AFD)=15/4

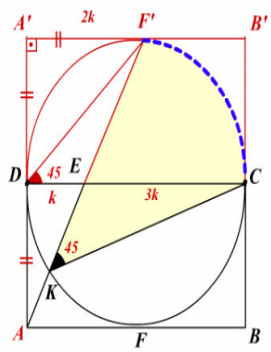
UĞur CEsur

SORU–20)



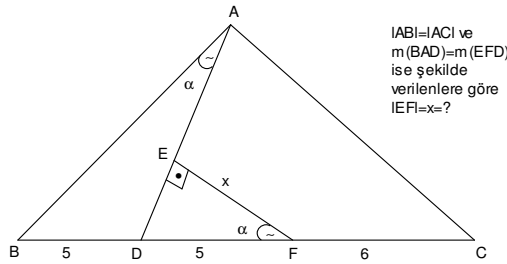
ABCD dikdörtgeni
DC çaplı yarım çembere,
C,D,F noktalarında teğet
3.DE =EC
ise m(EKC)=?

ÇÖZÜM:



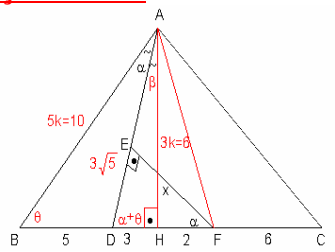
Şeklin simetriğini çizerek çemberi tamamlayalım.
AA'F üçgenini oluşturalım.
DA'F' üçgeni ikizkenar dik üçgen.
F'DC ile F'KC çevre açıları aynı yayı görüyor.
Ölçüleri eşit ve 45 dir.

SORU–21)



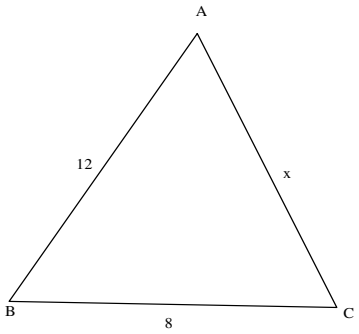
|AB|=|AC| ve
m(BAD)=m(EFD)
ise şekilde
verilenlere göre
|EF|=x=?

ÇÖZÜM-:



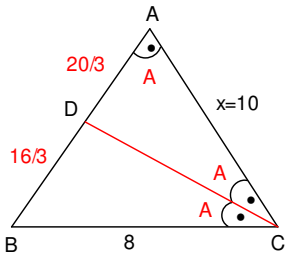
AH ve AF çizilir ve açılar isimlendirilse ADH ve DEF üçgenlerinden $\alpha+\beta+\theta=90=\alpha+\alpha+\theta$ ise $\alpha=\beta$ elde edilir. ABH üçgeni için AD açıortay ve AH=6 elde edilir. Pisagordan AD=3kök5 bulunur. ADF üçgeninin alanı;
$\frac{5.6}{2} = \frac{3\sqrt{5}\,x}{2}$ den $X=2\sqrt{5}$ bulunur.

SORU–22)



3m(A)+m(B)=180
x=?

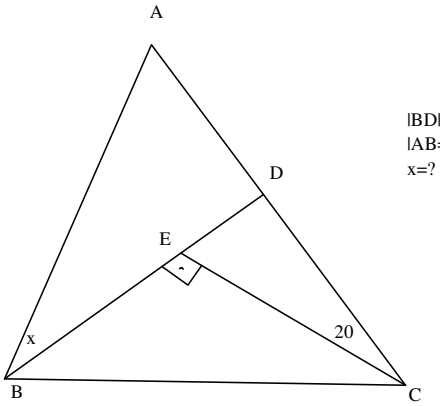
ÇÖZÜM:



3A+B=180
2A+A+B+C=180+C
2A=C olur. CD açıortayı çizilirse DBC ~ CBA benzerliğinden DB ve AD bulunur. Açıortay teo. x=10 bulunur.

YEMLÜHA

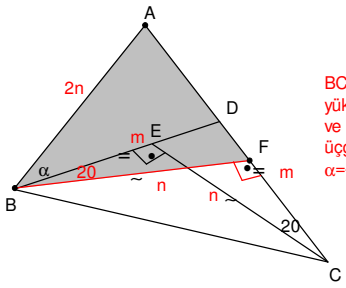
SORU–23)



|BD|=|DC|
|AB=2|EC|
x=?

A) 30 B) 35 C.) 40 D) 45 E) 50

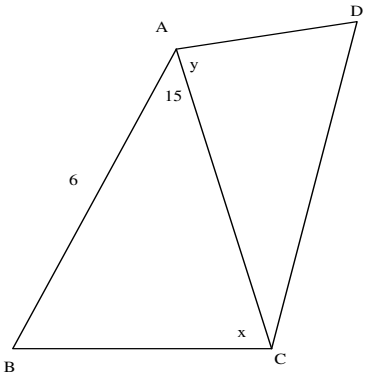
ÇÖZÜM:



BCD İkizkenar üçgen yükseklikler CE=BF ve BFA (30,60,90) üçgeni α+20=60 ise α=40

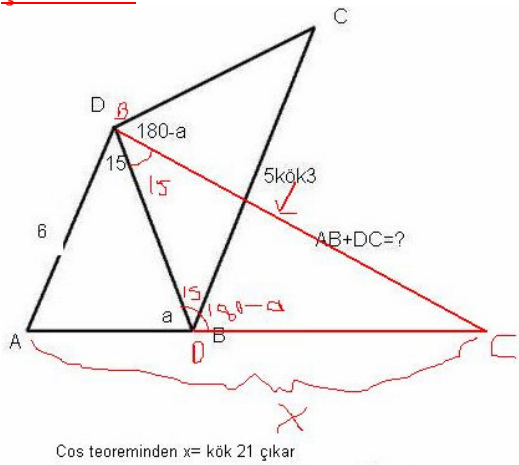
Yemlüha

SORU–24)



[AB]//[DC]
x+y=180
|CD|=5kök3
|BC|+|AD|=?

ÇÖZÜM:



Cos teoreminden x= kök 21 çıkar

SORU–25) Bir Çemberin İçine Yerleştirilen Altıgenin Kenarları 4,4,4,6,6,6 İse Bu Çokgenin Alanı=?

ÇÖZÜM:

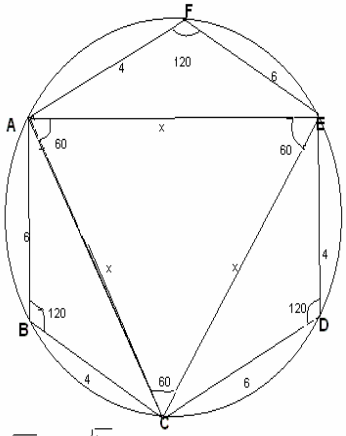
x^2=4^2+6^2-2*4*6*cos120
x^2=76

A(ACE)= $\frac{X^2\sqrt{3}}{4}$

$=19\sqrt{3}$

A(ABC)=(6*4*Sin120)/2

$=6\sqrt{3}$

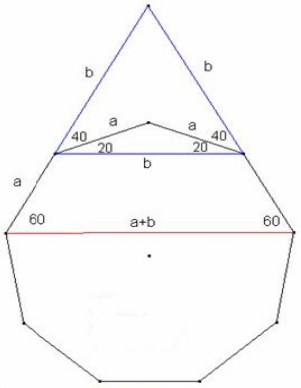


A(ABCDEF)=$19\sqrt{3}$ + $3*6\sqrt{3}$ = $37\sqrt{3}$

SORU–26)

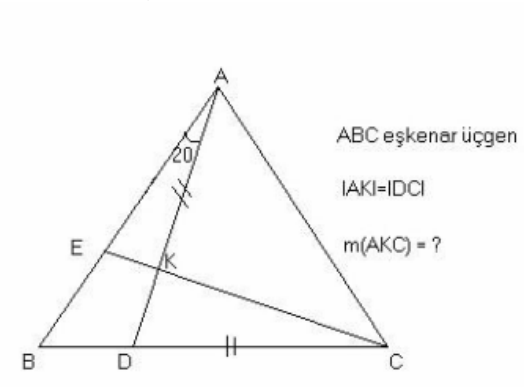
Bir düzgün dokuzgenin bir kenarıyla, en kısa köşegeninin uzunluğu toplamı 12 cm olduğuna göre bu çokgenin en uzun köşegeni kaç cm dir?

ÇÖZÜM:

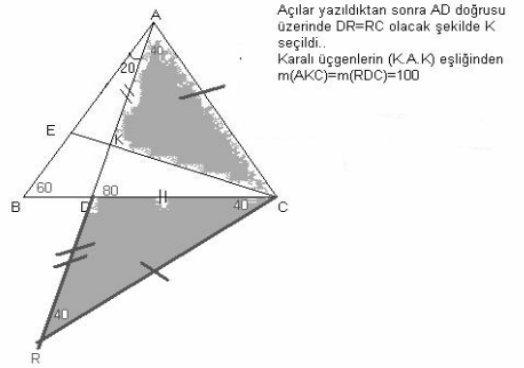


a+b=12
cvp=12

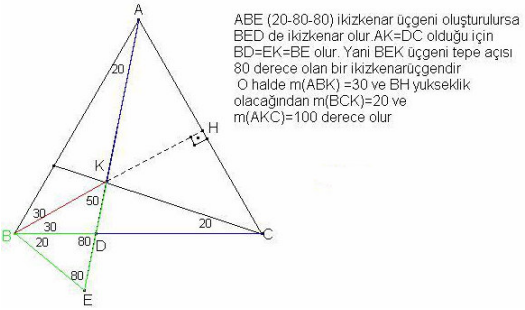
SORU–27)



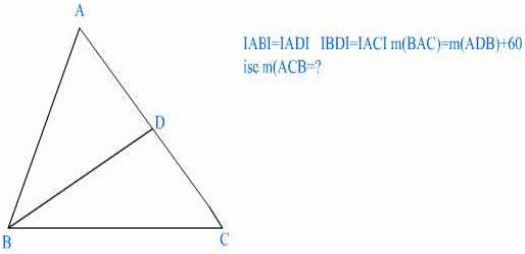
ÇÖZÜM -1:



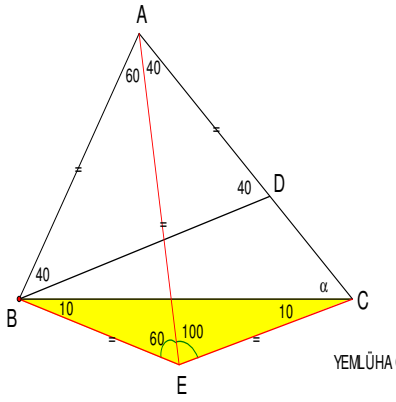
ÇÖZÜM -2:



SORU–28)

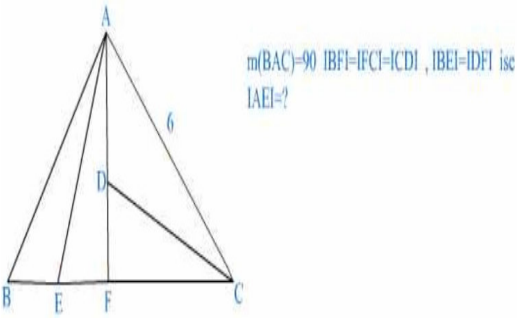


ÇÖZÜM:

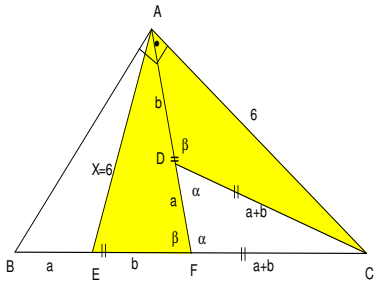


YEMLÜHA ONAT

SORU–29)

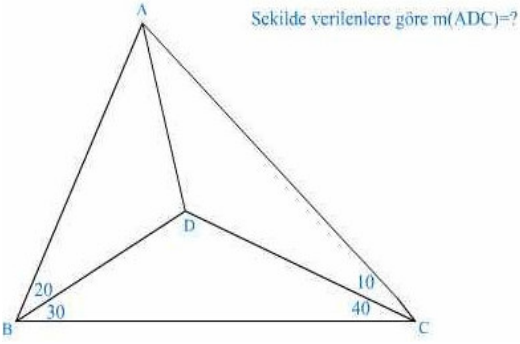


ÇÖZÜM:

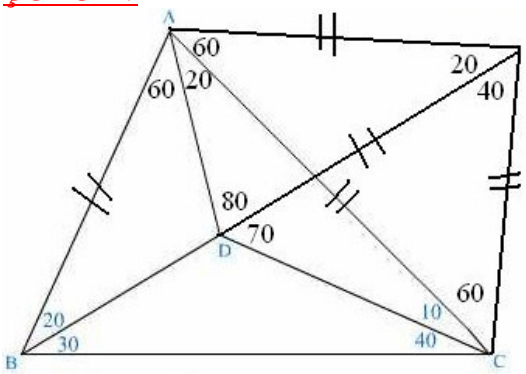


YEMLÜHA ONAT

SORU–30)

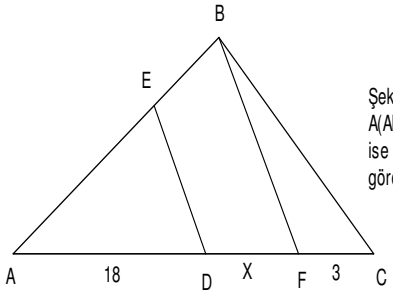


ÇÖZÜM:



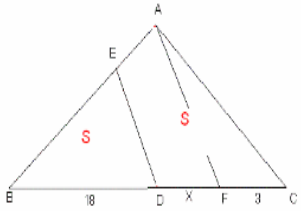
m(ADC)=150 olur.

SORU–31)



Şekilde ED//BF ve A(ADE)=A(DEBC) ise verilenlere göre x kaçtır?

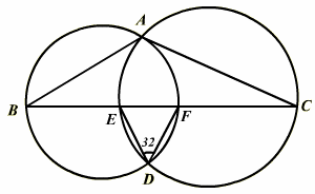
ÇÖZÜM:



$\frac{18.BE}{(21+X)BA} = \frac{1S}{2S}$ $\quad \frac{BE}{BA} = \frac{21+X}{36}$ $\quad \frac{BE}{BA} = \frac{18}{18+X}$ TEMEL ORANTI DAN

$\frac{21+X}{36} = \frac{18}{18+X} \rightarrow X=6$

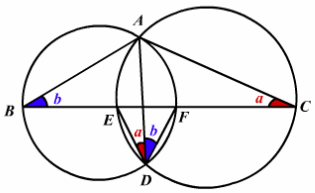
SORU–32)



Şekildeki çemberler A ve D noktasında kesişiyor. B,E,F,C noktaları doğrusal ve m(EDF)=32 ise m(BAC)=?

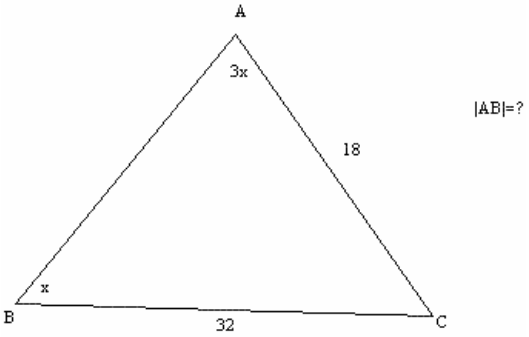
ÇÖZÜM:

CEVAP



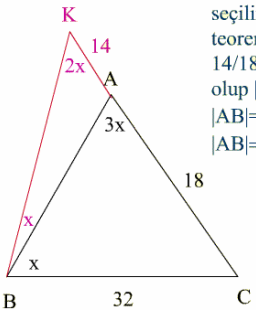
A ile D yi birleştirelim
Aynı yayı gören çevre açılar eşit.
mACE=mADE=a
mABF=mADF=b
diyelim. a+b=32
mBAC=180-(a+b)=
=180-32
=148

SORU–33)



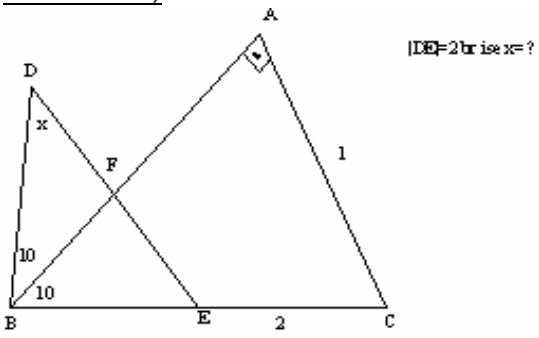
|AB|=?

ÇÖZÜM:



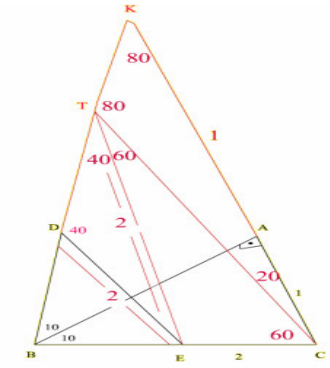
m(KBA)=x olacak şekilde K noktası seçilirse KBC üçgeninde iç açıortay teoreminden
14/18=|BK|/32
olup |BK|=224/9
|AB|=√[(224/9)*32−14*18]
|AB|=70/3

SORU–34)



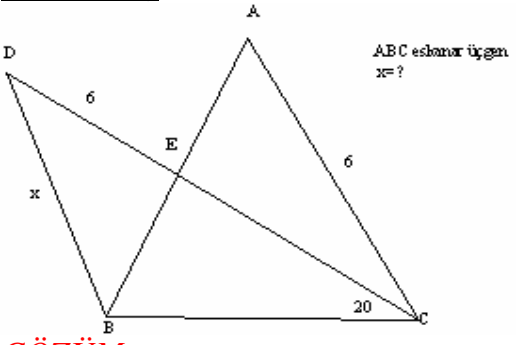
|DE|=2 br ise x=?

ÇÖZÜM:

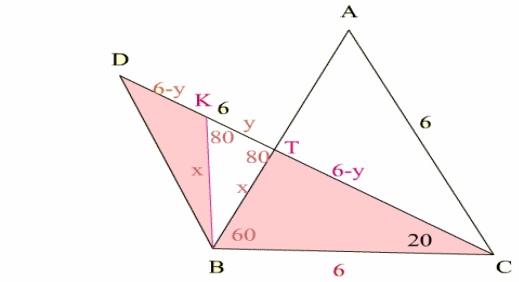


|KC|=|KT| olacak şekilde T noktası seçildi.ETC üçgeni eşkenar üçgen,TDE ikizkenar üçgen olup m(BDE)=140 bulunur

SORU–35)

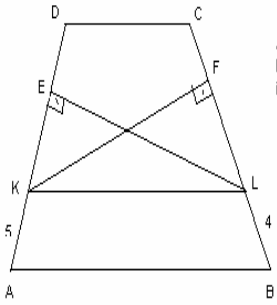


ÇÖZÜM:



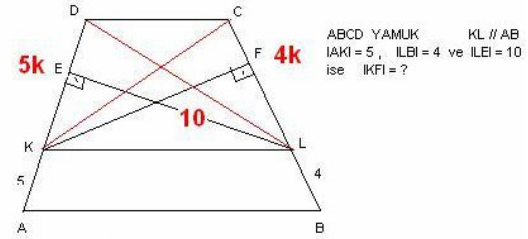
m(KBC)=80 olacak şekilde K noktası seçildi.
|KB|=x ve |KT|=y denilirse
KBD üçgeni ile TBC üçgeni eş üçgenler olup
|BC|=6 olduğundan
|AD|=6

SORU–36)



ABCD YAMUK KL // AB
|AK| = 5 , |LB| = 4 ve |LE| = 10
ise |KF| = ?

ÇÖZÜM:



ABCD YAMUK KL // AB
|AK| = 5 , |LB| = 4 ve |LE| = 10
ise |KF| = ?

A(KDL)=A(KCL)
5k.10=4k.|KF|
|KF|=25/2 olur

****

TMOZ grubu üyelerine bazı soruların çözümü için teşekkürler.

****

DERLEYEN:

Yemliha ONAT
mat. Öğretmeni
17.01.2007-Kayseri

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