ADINIZ :

SOYADINIZ:

SINIFINIZ:

NUMARANIZ:

matbaz

Matematik

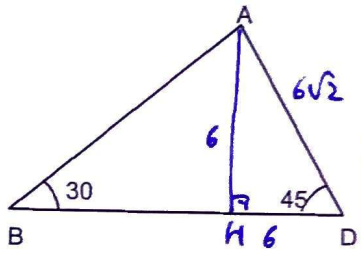
Üçgenler 6

NOT: HER SORUNUN TAM VE DOĞRU ÇÖZÜMÜ 10 PUANDIR. KISMI PUAN VERİLMEZ

ALDIĞI PUAN: .....

BAŞARI DİLEKLERİMİZLE...

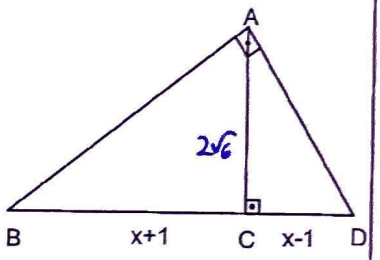
1) Şekilde ABC üçgen $|AD|=6\sqrt{2}$ br , $m(ADB)=45°$, $m(ABD)=30°$, ise $|AB|=?$



$[AH] \perp [BD]$ $\quad |HD|=6=|AH|$ $\quad (45-45-90)$

$|AB|=12$ $\quad (30-60-90)$

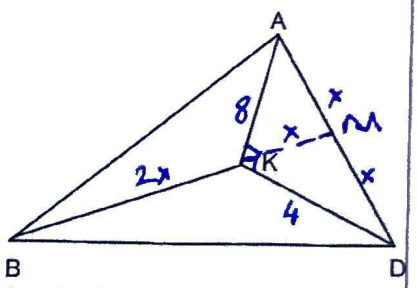
2) ABC dik üçgeninde $[BD] \perp [AC]$ $|AC|=2\sqrt{6}$ br , $|BC|=x+1$ br $|DC|=x-1$ br olduğuna göre x kaçtır?



$(2\sqrt{6})^2=(x-1)(x+1)$ (öklit)

$24=x^2-1 \Rightarrow x^2=25 \quad x=5$

3) K ABD üçgeninin ağırlık merkezi ve $AK \perp KD$ dir. $|AK|=8$ br , $|KD|=4$ br olduğuna göre , $\frac{|BK|}{|KD|}=?$

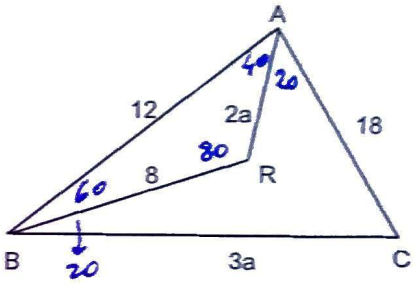


$|KM|=|MD|=|MA|$ muhtesem üçlü

$|KM|=x \Rightarrow |BM|=2x$

$(2x)^2=8^2+4^2 \Rightarrow 2x=4\sqrt{5}=|BK|$

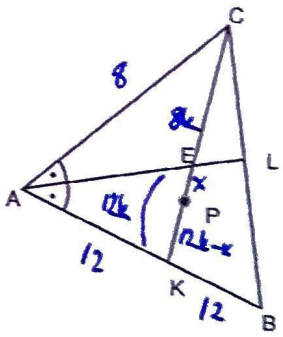
4) ABC ve ABR birer üçgendir. $|AB|=12$ br, $|AC|=18$ br , $|BR|=8$ br ve $3.|AR|=2.|BC|$ veriliyor. $m(BAR)=40°$, $m(RAC)=20°$ ise $m(RBC)=?$



$\overset{\triangle}{ABR} \sim \overset{\triangle}{CAB}$ $\quad k=2/3$ (benzerlik oranı)

$m(ABR)=m(BAC)=60 \Rightarrow m(BRA)=m(ABC)=80$

5) $\widehat{ABC}$ de P ağırlık merkezi ve C,E,P,K doğrusal noktalardır. $[AL] \cap [CK]=\{E\}$. $|AC|=8$ br, $|BK|=12$ br, ise $\frac{|EP|}{|CK|}=?$



Açıortay teoreminden

$\frac{|CE|}{|EK|}=\frac{8}{12}$

$\frac{8k+x}{12k-x}=2$ $\quad 24k-2x=8k+x$

$3x=16k$

$x=16k/3$

$|KP|=12k-\frac{16k}{3}=\frac{20k}{3}$

$|PC|=\frac{40k}{3}$

$\frac{|EP|}{|CK|}=\frac{20k/3}{20k}=1/3$

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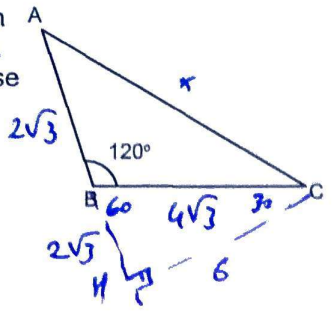
6) Şekilde ABC üçgen m(B)=120° veriliyor. 2.|AB|=|BC|=$4\sqrt{3}$ ise |AC|=?



CH ⊥ AB çizelim

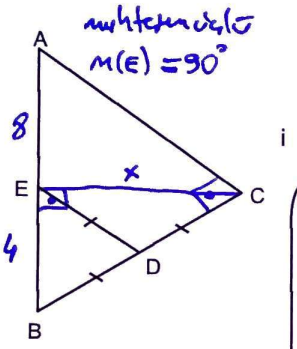
BHC 30-60-90

$\widehat{AHC}$ de

$x^2 = 4\sqrt{3}^2 + 6^2$

$x = 2\sqrt{21}$

7) $\widehat{ABC}$ bir üçgen, [BC] ⊥ [AC], |AE|=8 br, |EB|=4 br, se E ve C noktaları arası en kısa mesafe kaç birimdir?



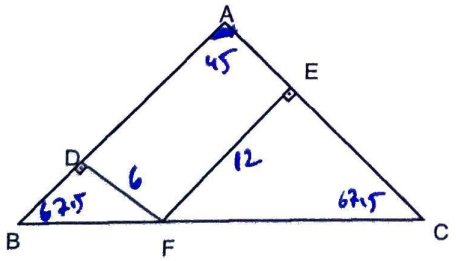
muhtemen üçlü

m(E) = 90°

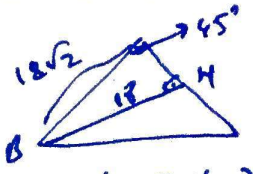
$x^2 = 8 \cdot 4$ (öklid)

$x = 4\sqrt{2}$

8)



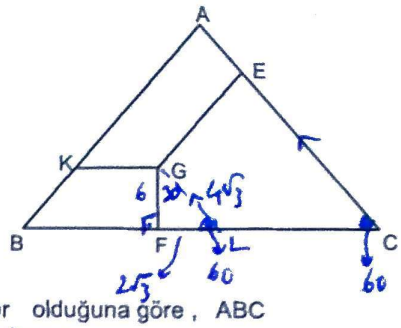
Şekilde ABC ikizkenar üçgen |AC|=|BA| m(DBF)=67.5°, 2.|DF|=|EF|=12 olduğuna göre |AB| kaç birimdir?



(45-45-90)

$|BH| = |DF| + |FE| \Rightarrow |AB| = 18\sqrt{2}$

9) ABC eşkenar üçgeninde [GF] ⊥ [BC], GK // BC ve AB // EG dir.



|GF|=6 br, |GK|+|EG|=$8\sqrt{3}$ br olduğuna göre, ABC üçgeninin alanını bulunuz.

GL // AC ⇒ 30-60-90 ⇒ $|FL| = 2\sqrt{3}$

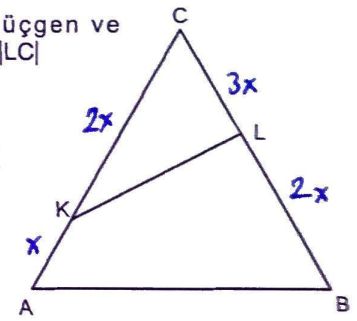
$|GL| = 4\sqrt{3}$

$|KG| + |GL| + |GE| = 4\sqrt{3} + 8\sqrt{3}$

$= 12\sqrt{3} = |AB|$ (özellik)

$A(ABC) = \frac{(12\sqrt{3})^2}{4} = 108 \text{ br}^2$

10) a) Şekilde ABC bir üçgen ve 3|CK|=3|LB|=6|AK|=2|LC| ise $\frac{A(ABC)}{A(CKL)}$=?



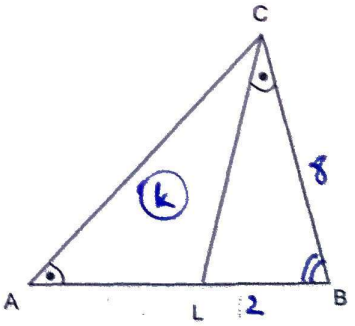
$A(CKL) = \frac{1}{2} \cdot 2x \cdot 3x \cdot \sin C$

$A(ABC) = \frac{1}{2} \cdot 3x \cdot 5x \cdot \sin C$

$\frac{A(ABC)}{A(CKL)} = \frac{15}{6}$

$= 5/2$

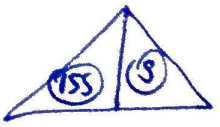
b) ABC bir üçgen m(A)=m(LCB) dir. |AL|=2 br, |BC|=8 br ve A(ALC)=k br² ise A(ABC) kaç k² olur



$\widehat{BCL} \sim \widehat{BAC}$

oran $\frac{2}{8} = \frac{1}{4}$

$\frac{A(BCL)}{A(BAC)} = \frac{1}{16}$



$15S = k \Rightarrow 16S = k + \frac{k}{15}$

$= \frac{16k}{15}$

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