

11

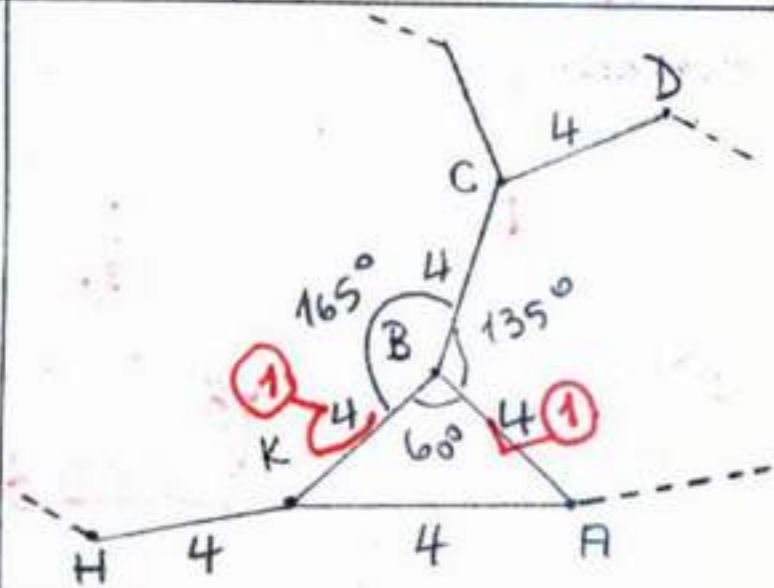
Ad Soyad

No

ARNAVUTKÖY KORKMAZ YİĞİT ANADOLU LİSESİ
2008-2009 EĞİTİM VE ÖĞRETİM YILI
I. DÖNEM I. GEOMETRİ II YAZILISI

1

10 puan



ABCD... düzgün sekizgen
CBKH... düzgün yirmidörtgen
 $|CD|=4 \rightarrow |AK|=?$

$$m(\widehat{KBA}) = 60^\circ \quad (2)$$

$\downarrow \Delta$
BKA eşkenar (1)

$$\boxed{|KA|=4} \quad (1)$$

$$\frac{360^\circ}{8} = 45^\circ \rightarrow m(\widehat{CBA}) = 135^\circ \quad (2)$$

$$\frac{360^\circ}{24} = 15^\circ \rightarrow m(\widehat{CBK}) = 165^\circ \quad (2)$$

2

10 puan

n kenarlı dışbükey bir çokgenin
köşegen sayısının $\frac{n \cdot (n-3)}{2}$

olduğunu gösterin.

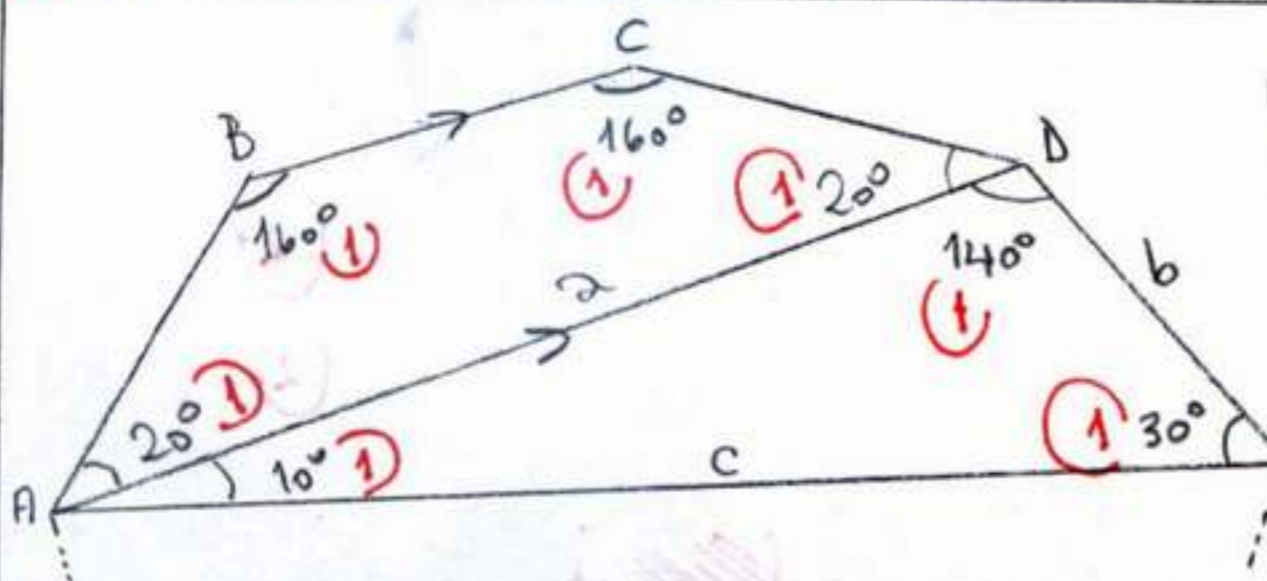
n adet noktadan 2'li seçimler yapılarak $\binom{n}{2}$ (2)

Bunlardan n tanesi çokgeni oluşturur (2)

$$\binom{n}{2} - n = \frac{n \cdot (n-1)}{2} - n = \frac{n^2 - n - 2n}{2} = \frac{n^2 - 3n}{2} = \frac{n \cdot (n-3)}{2} \quad (3)$$

3

10 puan



ABCDE... düzgün onsekizgen

$|AD|=a \wedge |DE|=b \wedge |AE|=c \rightarrow A(\widehat{ADE})=?$

$$\frac{360^\circ}{18} = 20^\circ \rightarrow 14 \text{ açı: } 160^\circ$$

$$A(\widehat{ADE}) = \frac{1}{2} \cdot c \cdot b \cdot \sin 30^\circ = \frac{bc}{4} \quad (1)$$

(2)

4

10 puan

ABCD dörtgeninde $m(\widehat{A})=m(\widehat{C})$ ve $m(\widehat{B})=70^\circ$.

\widehat{A} ve \widehat{C} sırasıyla; 5 ve 7 adet 180'a, herbirinin
ölçüsü tam sayı olan eş açılara bölünmüştür.

minimum $[m(\widehat{D})]=?$

$$\text{EKOK}(6,8) = 24^\circ$$

$$\min a = \min c = 24^\circ \quad (2)$$

$$\min a + \min c = 48^\circ \quad (1)$$

d 'nin minimum olması için,
 a, c maximum olmalı

$$a + 70^\circ + c + d = 360^\circ$$

$$a + c + d = 290^\circ \quad (2)$$

$$\begin{array}{r} 290^\circ \\ - 48^\circ \\ \hline 242^\circ \end{array}$$

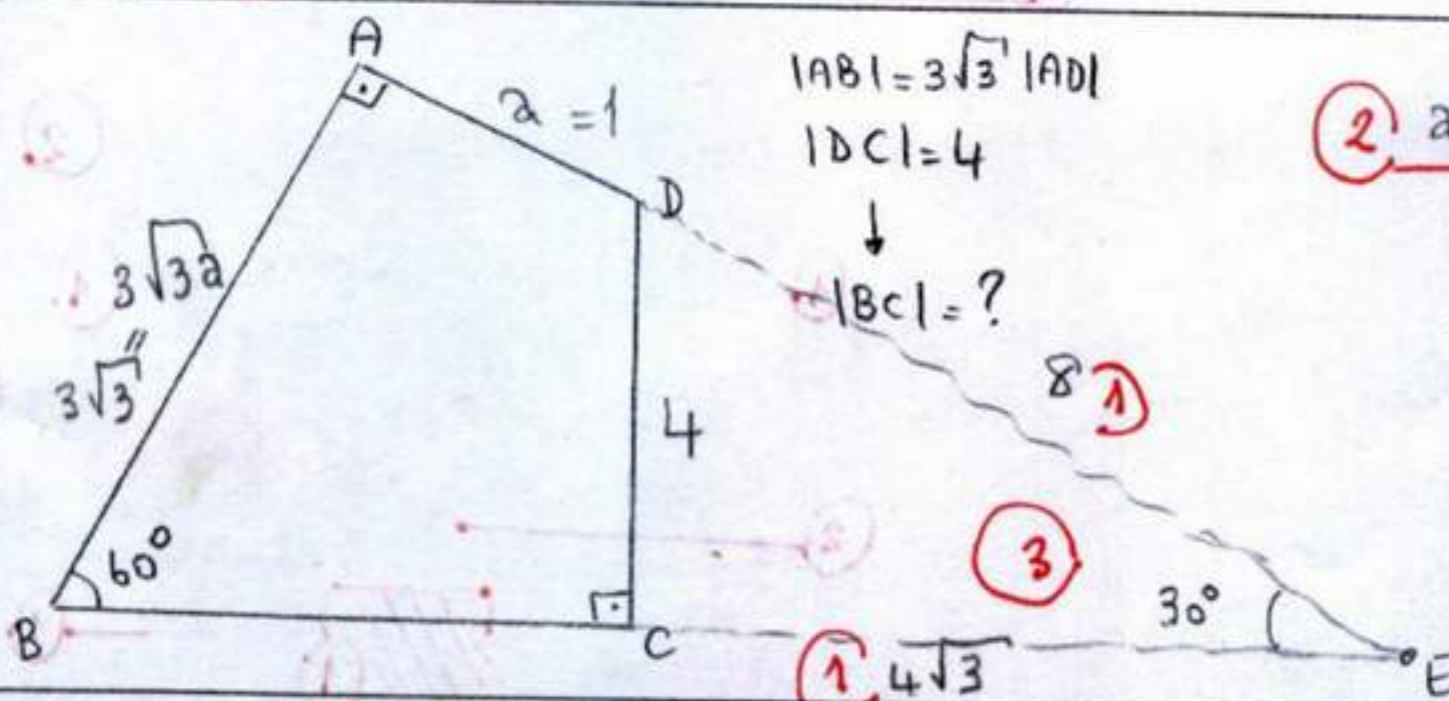
$$\frac{242^\circ}{6} = 40^\circ \quad (2)$$

$$\min d = 2^\circ \quad (1)$$

$$\begin{pmatrix} a \\ c \\ d \\ 144^\circ \end{pmatrix}$$

5

10 puan



$$|AB| = 3\sqrt{3}|AD|$$

$$|DC| = 4$$

$$\downarrow$$

$$|BC| = ?$$

$$8 \quad (1)$$

$$3 \quad (3)$$

$$4\sqrt{3} \quad (1)$$

$$(2) \quad a + 8 = \sqrt{3} \cdot (3\sqrt{3}a) \quad (30^\circ - 60^\circ - 90^\circ)$$

$$a + 8 = 9a \rightarrow a = 1 \quad (1)$$

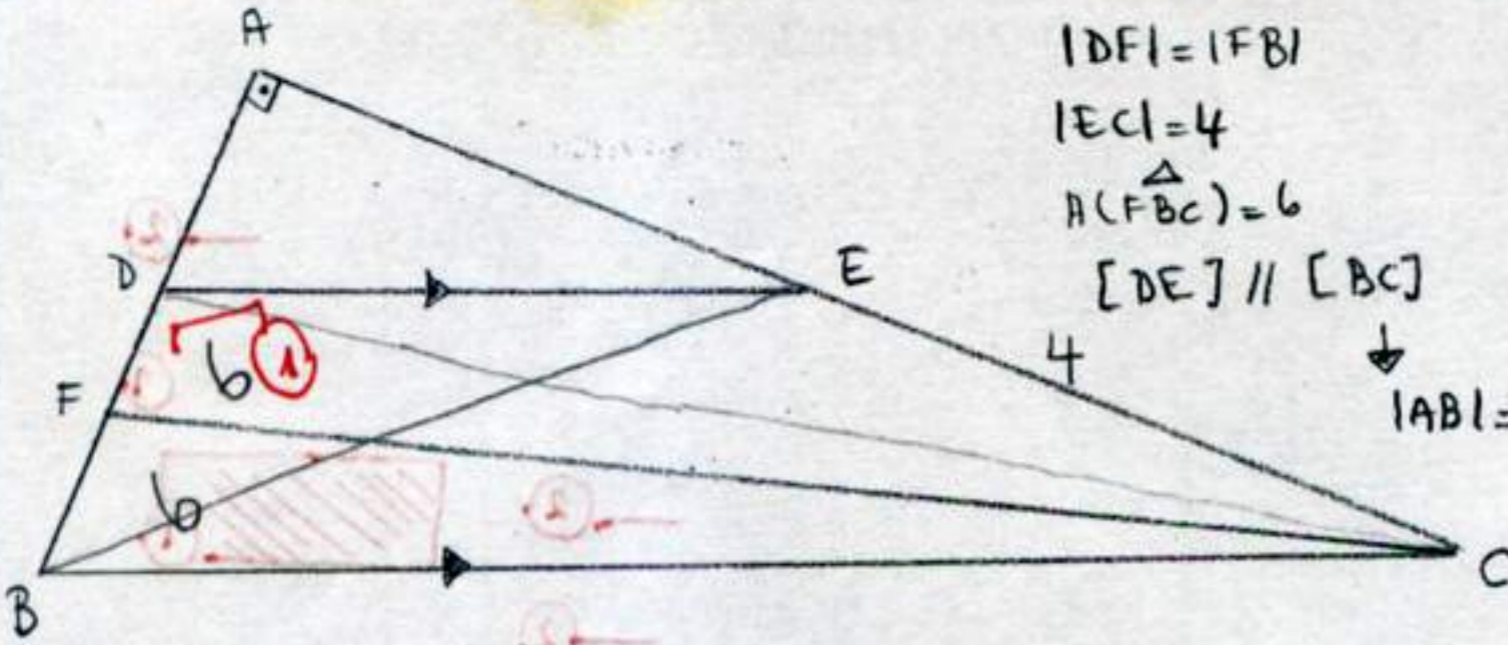
$$\rightarrow |BE| = 6\sqrt{3} \quad (1)$$

$$|BC| = 2\sqrt{3} \quad (1)$$

4. 2008-2009 Eğitim ve Öğretim Yılı I. Dönem I. Geometri II Yazılısı

6

10 puan



$|DF| = |FB|$
 $|EC| = 4$
 $A(\triangle FBC) = 6$
 $[DE] \parallel [BC]$

$|AB| = ?$

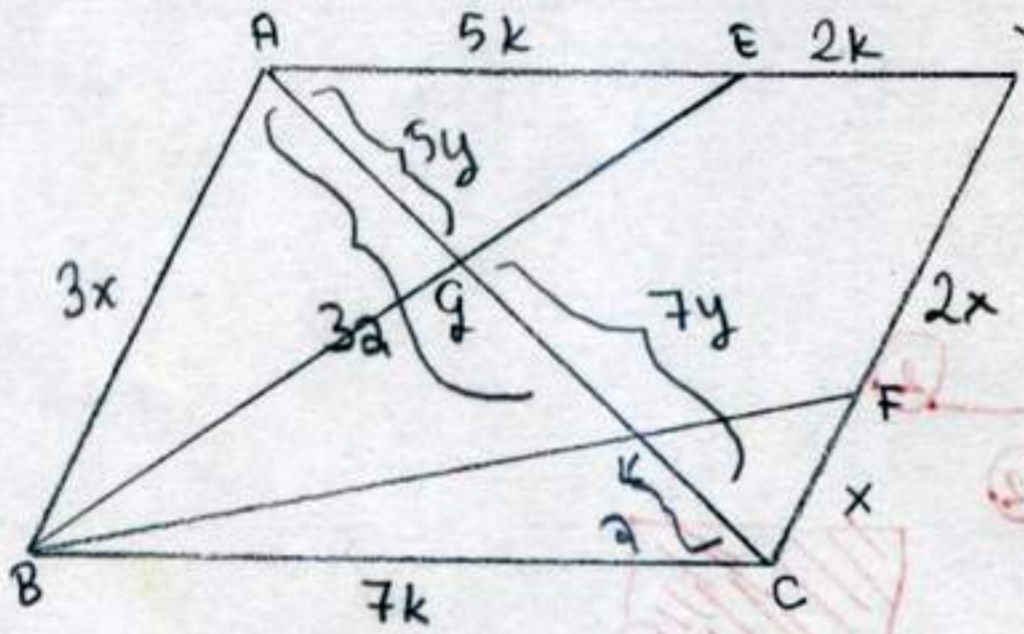
1 $A(\triangle BDC) = 12 = A(\triangle BEC)$ 3
 (yükseklik ve taban aynı)

$\frac{4 \cdot |AB|}{2} = 12$ 3

$|AB| = 6$ 3

7

10 puan



ABCD paralelkenar
 $[AC]$ köşegen
 $|AB| = 3|FC|$
 $5|ED| = 2|AE|$

2 $\triangle AGE \sim \triangle CGB$ (A.A)
 $\frac{5}{7}$

1 $|AG| = 5y \wedge |GC| = 7y$

2 $\triangle FLC \sim \triangle BLA$ (A.A)
 $\frac{1}{3}$

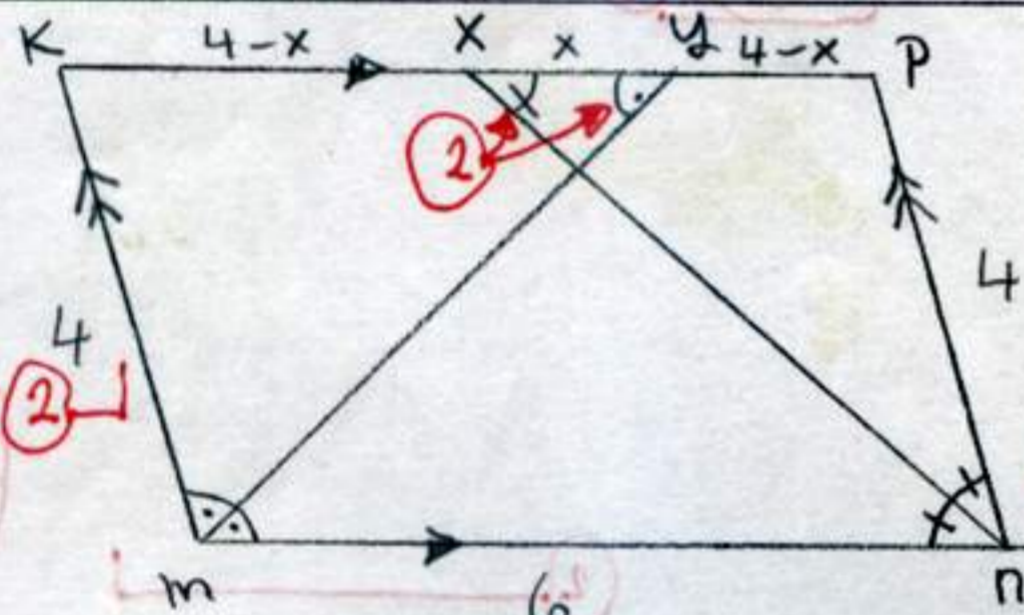
$12y = 4a$
 $a = 3y$ 3

1 $|AL| = 3a$
 $|LC| = a$

$\frac{|CL|}{|AG|} = \frac{3y}{5y} = \frac{3}{5}$ 2

8

10 puan



KMPN paralelkenar
 $|mnl| = 6 \wedge |npl| = 4 \rightarrow |xy| = ?$

$\triangle mky$ ikizkenar $|mk| = |ky|$ 2

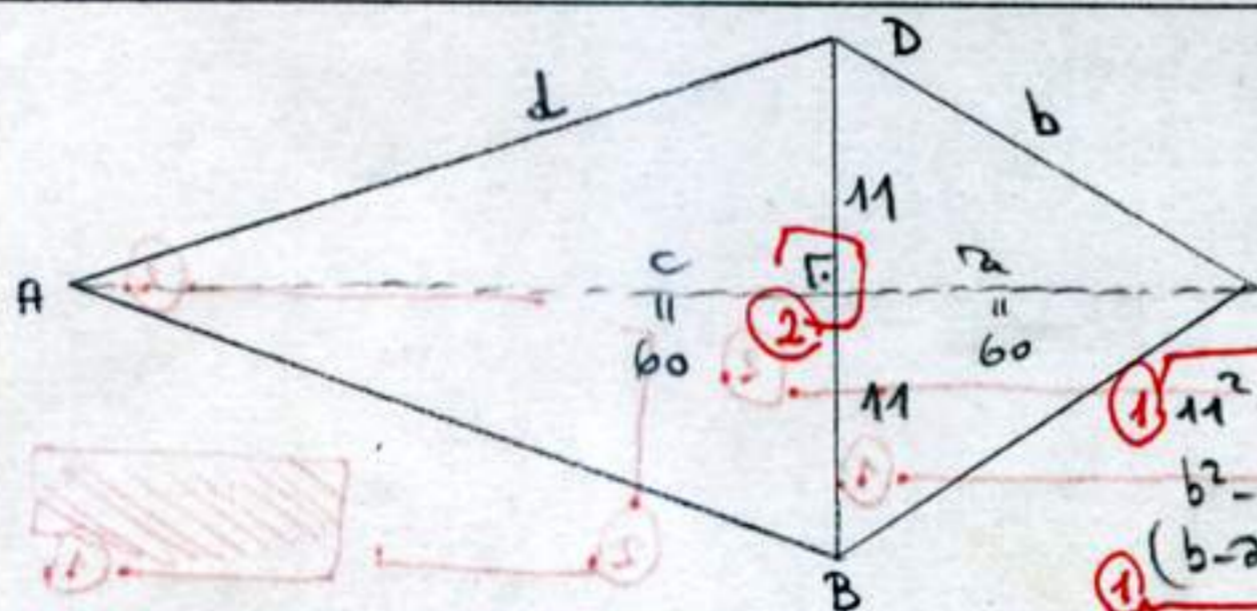
$\triangle npx$ ikizkenar $|np| = |px|$ 2

$4 - x + x + 4 - x = 6$

$x = 2$ 2

9

10 puan



ABCD deltoid $\wedge |AD| = |AB|$
 $|BD| = 22$

$|AC|, |AD|, |DC| \in \mathbb{Z} \rightarrow A(ABCD) = ?$

$a, b, c, d \in \mathbb{Z}$

1 $11^2 + a^2 = b^2$

1 $b = 61 = d$ 1

$b^2 - a^2 = 121$

1 $a = 60 = c$ 1

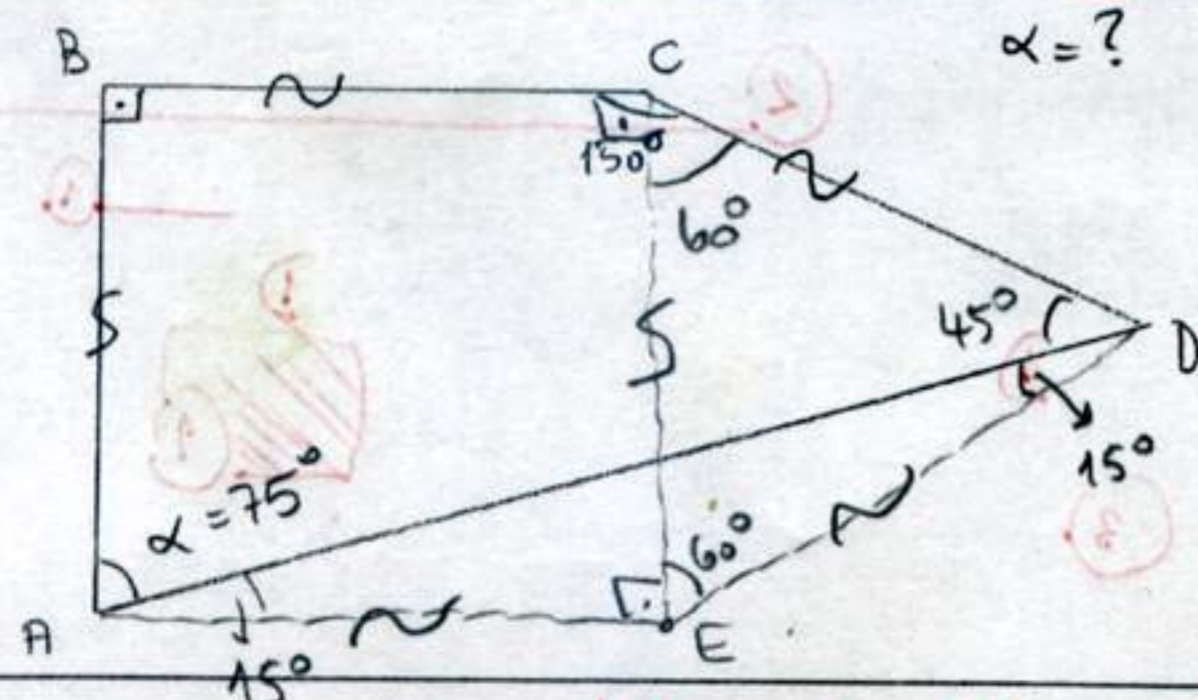
1 $(b-a) \cdot (b+a) = 121$

$\frac{120 \cdot 22}{2}$ 1

$= 1320$ 1

10

10 puan



$\alpha = ?$

ABCE karesi: oluşturulur 2

1 $|CD| = |CE| \wedge m(\widehat{ECD}) = 60^\circ$ 1

$\triangle ECD$ eşkenar olur 2

2 $m(\widehat{AED}) = 150^\circ \rightarrow m(\widehat{DAE}) = m(\widehat{ADE})$

$\frac{150}{2}$ 1

$m(\widehat{BAD}) = 75^\circ$ 1

Yorum: 6 \rightarrow Sonuç: 4