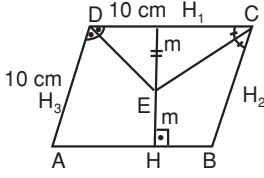


TEST 2

Eşkenar Dörtgen ve Deltoid

1.



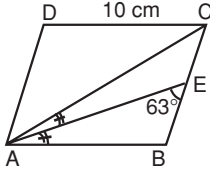
$|EH_1| = |EH| = m$ olsun.

$$\begin{aligned} A(ABCD) &= IABI \cdot IHH_1I \\ &= 10 \cdot 2m = 80 \\ &= m = 4 \text{ bulunur.} \end{aligned}$$

$[EH] = m'$ dir.

Cevap: D

2.



$s(\widehat{CAE}) = s(\widehat{EAB}) = \alpha$ olsun.

\widehat{AEB} ninde;

$$\alpha + 63 + s(\widehat{B}) = 180^\circ$$

$$\Rightarrow s(\widehat{B}) = 117 - \alpha \text{ olsun.}$$

$$s(\widehat{CAB}) = s(\widehat{DAC}) = 2\alpha \text{ olur.}$$

(Köşegen açıortaydır eşkenar dörtgende.)

$$s(\widehat{A}) + s(\widehat{B}) = 180^\circ$$

$$\Rightarrow (2\alpha + 2\alpha) + 117 - \alpha = 180^\circ$$

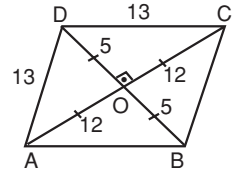
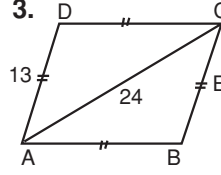
$$\Rightarrow 3\alpha = 180^\circ - 117 = 63^\circ$$

$$\Rightarrow \alpha = 21^\circ \text{ bulunur.}$$

$$\Rightarrow s(\widehat{B}) = 117 - \alpha = 117 - 21 = 96^\circ \text{ bulunur.}$$

Cevap: B

3.



\widehat{AOD} ninde;

$$12^2 + |OD|^2 = 13^2$$

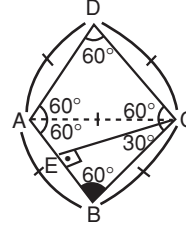
$|OD| = 5$ bulunur.

$$|OD| = |DB|$$

$$\begin{aligned} A(ABCD) &= \frac{|AC| \cdot |BD|}{2} \\ &= \frac{10 \cdot 24}{2} \\ &= 120 \end{aligned}$$

Cevap: C

4.



$s(\widehat{D}) = s(\widehat{B})$ olur. (Eşkenar dörtgende karşılıklı açılar eşittir.)

\widehat{EBC} ninde;

$|BC| = 10$ cm ve $|EB| = 5$ cm olur. ($90^\circ - 30^\circ - 60^\circ$)

\widehat{ADC} ve \widehat{BAC} eşkenar üçgen olur.

$$s(ABCD) = s(\widehat{ADC}) + s(\widehat{BAC}) \text{ dir.}$$

$$s(\widehat{ADC}) = s(\widehat{BAC}) = \frac{10^2 \cdot \sqrt{3}}{4} = 25\sqrt{3}$$

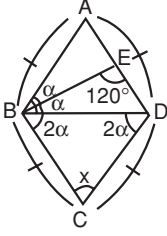
(Eşkenar üçgenin alanı bir kenarının

karesinin $\frac{\sqrt{3}}{4}$ katıdır.)

$$\Rightarrow s(ABCD) = 25\sqrt{3} + 25\sqrt{3} = 50\sqrt{3}$$

Cevap: A

5.



$$s(\widehat{ABE}) = s(\widehat{EBD}) = \alpha \text{ olsun.}$$

(Açıortaydan)

IABI = IADI olduğundan taban açıları eşittir.

$$s(\widehat{ABD}) = s(\widehat{ADB}) \text{ dir.}$$

$$\Rightarrow s(\widehat{ABD}) = s(\widehat{ADB}) = 2\alpha$$

\widehat{BED} 'ninde;

$$\alpha + 2\alpha + 120 = 180^\circ$$

$$\Rightarrow 3\alpha = 180 - 120 = 60^\circ$$

$$\Rightarrow \boxed{\alpha = 20^\circ} \text{ bulunur.}$$

$s(\widehat{ABD}) = s(\widehat{DBC})$ 'dir. (Köşegen açıortaydır.)

\widehat{BCD} 'ninde;

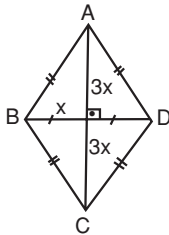
$$2\alpha + 2\alpha + x = 180^\circ$$

$$2 \cdot 20 + 2 \cdot 20 + x = 180^\circ$$

$$\Rightarrow \boxed{x = 100^\circ} \text{ bulunur.}$$

Cevap: C

6.



ABCD eşkenar dörtgeninde

$$IACI = 3 \cdot IBDI$$

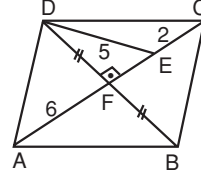
$$A(ABCD) = \frac{6x \cdot 2x}{2} = 96$$

$$x = 4 \text{ bulundu.}$$

$$IBDI = 2x = 2 \cdot 4 = 8$$

Cevap: A

7.



(Eşkenar dörtgende köşegenler birbirini ortalar ve dik kesişirler.)

$$IAFI = IFCI, \quad IFEI = 6 - 4$$

\widehat{DFE} ninde;

$$5^2 = IFEI^2 + IDFI^2 \Rightarrow 25 = 4^2 + IDFI^2$$

$$\Rightarrow IDFI = 3 \text{ bulunur.}$$

$$IDFI = IFBI = 3 \Rightarrow IDBI = 6 \text{ bulunur.}$$

$$IACI = 6 + 6 = 12 \text{ ve } IDBI = 6 \text{ cm'dir.}$$

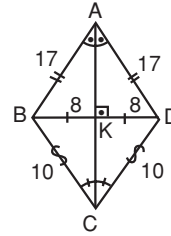
$$\Rightarrow A(ABCD) = \frac{IACI \cdot IDBI}{2}$$

(Köşegenler çarpımının yarısıdır.)

$$\Rightarrow A(ABCD) = \frac{12 \cdot 6}{2} = 36 \text{ cm}^2$$

Cevap: A

8.



$$IABI = IADI \Rightarrow IBCI = ICDI \text{ dir.}$$

$$IBKI = IKDI \text{ dir.}$$

$$\Rightarrow IBKI = IKDI = 8 \text{ cm olur.}$$

\widehat{ABK} ninde;

$$17^2 = 8^2 + IAKI^2 \Rightarrow IAKI = 15$$

\widehat{BKC} ninde;

$$8^2 + IKCI^2 = 10^2 \Rightarrow IKCI = 6$$

$$\Rightarrow IACI = 15 + 6 = 21 \text{ cm}$$

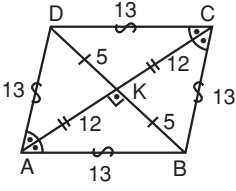
$$IBDI = 8 + 8 = 16$$

$$\Rightarrow A(ABCD) = \frac{IACI \cdot IDBI}{2} = \frac{21 \cdot 16}{2}$$

$$= 168 \text{ cm}^2$$

Cevap: B

9.



$[AC] \perp [BD]$ (Eşkenar dörtgende köşegenler dik kesişir.)

$$IDKI = IKBI = 5$$

$$IAKI = IKCI = 12 \text{ olur.}$$

\widehat{AKB} ninde;

$$5^2 + 12^2 = IABI^2 \Rightarrow 169 = IABI^2$$

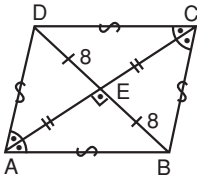
$$\Rightarrow IABI = 13 \text{ cm bulunur.}$$

$IABI = IBCI = ICDI = IADI$ olduğundan

$$\text{Ç}(ABCD) = 4 \cdot IABI = 4 \cdot 13 = 52 \text{ olur.}$$

Cevap: C

10.



$IDEI = IEBI$ 'dir. (Eşkenar dörtgende köşegenler birbirini ortalar.)

\widehat{AEB} ninde;

$$8^2 + IAEI^2 = 10^2 \Rightarrow IAEI = 6$$

$$\Rightarrow IAEI = IECI = 6 \text{ olur.}$$

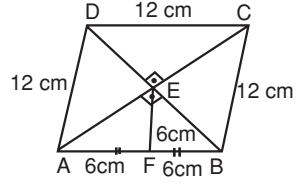
$$\Rightarrow IACI = 6 + 6 = 12$$

$$IBDI = 8 + 8 = 16 \text{ 'dir.}$$

$$\begin{aligned} \Rightarrow A(ABCD) &= \frac{IACI \cdot IBDI}{2} \\ &= \frac{12 \cdot 16}{2} = 96 \text{ cm}^2 \end{aligned}$$

Cevap: B

11.



\widehat{AEB} dik üçgeninde;

$[AB]$ hipotenüs

$[EF]$ hipotenüse ait kenarortay

$$IEFI = \frac{IABI}{2}$$

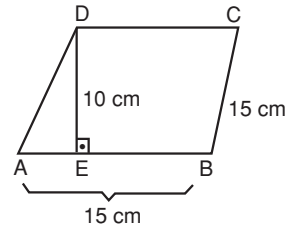
$$6 = \frac{IABI}{2}$$

$$IABI = 12 \text{ cm}$$

$$\text{Ç}(ABCD) = 4 \cdot 12 = 48 \text{ cm}$$

Cevap: C

12.



$$IABI = IBCI = 15 \text{ cm}$$

(Eşkenar üçgende bütün kenar uzunlukları birbirine eşittir.)

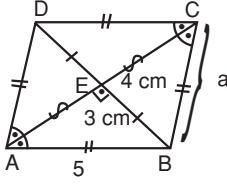
$$A(ABCD) = IDEI \cdot IABI$$

$$= 10 \cdot 15$$

$$= 150 \text{ cm}^2$$

Cevap: A

13.



\widehat{BEC} dik üçgeninde;

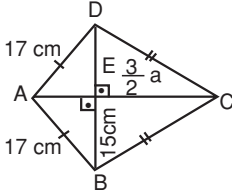
Pisagor

$$a^2 = 4^2 + 3^2 \Rightarrow a^2 = 16 + 9$$

$$a^2 = 25 \Rightarrow a = 5 \text{ cm}$$

Cevap: B

14.



\widehat{AEB} dik üçgeninde;

Pisagor

$$a^2 + 15^2 = 17^2 \Rightarrow a^2 = 289 - 225$$

$$a^2 = 64 \Rightarrow a = 8 \text{ cm}$$

$$IAEI = 8 \text{ cm}$$

\widehat{AED} dik üçgeninde yine pisagor ile>

$$IDEI = 15 \text{ bulunur.}$$

$$IDBI = IDEI + IEI$$

$$= 15 + 15$$

$$= 30 \text{ cm (Köşegen)}$$

$$IECI = \frac{3}{2} \cdot IAEI$$

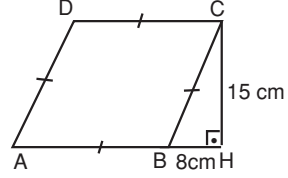
$$= \frac{3}{2} \cdot 8 = 12 \text{ cm}$$

$$IACI = IAEI + IECI \Rightarrow 8 + 12 \Rightarrow 20 \text{ cm (Köşegen)}$$

$$A(ABCD) = \frac{30 \cdot 20}{2} = 300 \text{ cm}^2$$

Cevap: D

15.



\widehat{BCH} dik üçgeninde;

Pisagor

$$ICBI^2 = 8^2 + 15^2 \Rightarrow = 64 + 225$$

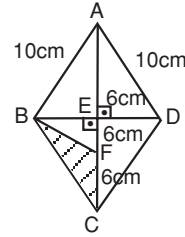
$$\Rightarrow 289 \Rightarrow ICBI = 17$$

$$IABI = ICBI = 17 = IADI = IDCI$$

$$\text{Ç}(ABCD) = 4 \cdot 17 \Rightarrow 68 \text{ cm}$$

Cevap: B

16.



E köşesinde açılar diktir. Deltoitte köşegenler birbirini dik keser.

\widehat{AED} dik üçgeninde;

Pisagor

$$IAEI^2 + 6^2 = 10^2 \Rightarrow IAEI^2 = 100 - 36$$

$$\Rightarrow 64 \Rightarrow IAEI = 8$$

IBEI aynı yolla 6 cm bulunur.

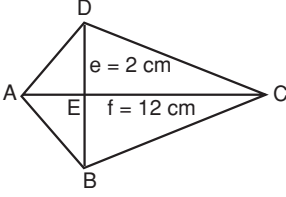
[BE] kenarı, \widehat{BFC} 'nin [FC] taban kenarına ait yüksekliğidir.

$$A(\widehat{BFC}) = \frac{IBEI \cdot IFCI}{2}$$

$$= \frac{6 \cdot 6}{2} = \frac{36}{2} = 18 \text{ cm}^2$$

Cevap: B

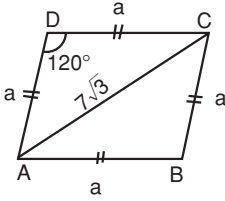
17.



$$A(ABCD) = \frac{e \cdot f}{2} = \frac{2 \cdot 12}{2} = 12 \text{ cm}^2$$

Cevap: D

18.



$$|DA| = |DC| = a$$

$$\angle ADC = 120$$

$$|AC| = a\sqrt{3}$$

$$a\sqrt{3} = 7\sqrt{3}$$

$$a = 7 \quad (120^\circ - 30^\circ - 30^\circ \text{den})$$

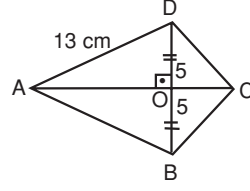
$$A(ABCD) = 4 \cdot a$$

$$= 4 \cdot 7$$

$$= 28 \text{ cm}$$

Cevap: A

19.


 \widehat{AOD} dik üçgeninde;

Pisagor

$$13^2 = |AO|^2 + 5^2$$

$$169 = |AO|^2 + 25$$

$$|AO|^2 = 144$$

$$|AO| = 12 \text{ cm}$$

$$|AC| = |AO| + |OC|$$

$$A(ABCD) = \frac{|BD| \cdot |AC|}{2}$$

$$80 = \frac{10 \cdot |AC|}{2}$$

$$160 = 10 \cdot |AC|$$

$$|AC| = 16 \text{ cm bulunur.}$$

$$|AC| = |AO| + |OC| \text{ idi.}$$

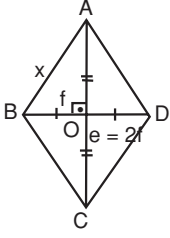
$$16 = 12 + x$$

$$x = 16 - 12$$

$$x = 4 \text{ cm}$$

Cevap: B

20.



$$A(ABCD) = \frac{e \cdot f}{2}$$

$$60 = \frac{2f \cdot f}{2}$$

$$60 = \frac{2f \cdot f^2}{2}$$

$$60 = f^2$$

$$f = 2\sqrt{15}$$

$$e = 2f$$

$$= 2 \cdot 2\sqrt{15}$$

$$= 4\sqrt{15}$$

$$|BO| = \frac{1}{2} f = \frac{4\sqrt{15}}{2}$$

$$|BO| = \sqrt{15}$$

$$|AO| = 2\sqrt{15}$$

\widehat{AOB} dik üçgeninde;

Pisagor

$$|AB|^2 = |BO|^2 + |AO|^2$$

$$x^2 = (\sqrt{15})^2 + (2\sqrt{15})^2$$

$$x^2 = 15 + 60$$

$$x = 5\sqrt{3}$$

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Cevap: D