

$$\begin{aligned} 1. \quad a + b &= 180^\circ \\ a + c &= 90^\circ \\ + \quad b + c &= 130^\circ \end{aligned}$$

$$\begin{aligned} 2(a + b + c) &= 180^\circ + 90^\circ + 130^\circ \\ 2(a + b + c) &= 400^\circ \\ (a + b) + c &= 200^\circ \\ 180^\circ + c &= 200^\circ \text{ ise } c = 20^\circ \text{ olur.} \end{aligned}$$

Cevap: B

$$\begin{aligned} 2. \quad m(\widehat{DBE}) &= m(\widehat{EBF}) = \alpha \\ m(\widehat{FBK}) &= m(\widehat{BCK}) = \theta \\ m(\widehat{EBK}) &= \alpha + \theta \end{aligned}$$

$$\begin{aligned} 2\alpha + 2\theta + 78^\circ &= 180^\circ \\ 2(\alpha + \theta) &= 102^\circ \\ \alpha + \theta &= 51^\circ \end{aligned}$$

Cevap: B

$$\begin{aligned} 3. \quad m(\widehat{BAE}) &= \alpha \\ m(\widehat{FAC}) &= 7\alpha \end{aligned}$$

$$\begin{aligned} m(\widehat{FAC}) &= m(\widehat{ACD}) = 7\alpha \text{ (iç ters açı)} \\ m(\widehat{ABC}) &= \frac{7\alpha}{2} + \alpha = \frac{9\alpha}{2} \text{ (zik-zak açı kuralı)} \end{aligned}$$

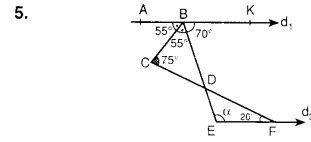
$$\frac{m(\widehat{DCB})}{m(\widehat{ABC})} = \frac{\frac{7\alpha}{2}}{\frac{9\alpha}{2}} = \frac{7}{9} \text{ olur.}$$

Cevap: E

$$\begin{aligned} 4. \quad m(\widehat{BEF}) &= m(\widehat{ABE}) = 50^\circ \\ &\text{(iç ters açı)} \\ m(\widehat{ABE}) &= 50^\circ \text{ ise} \\ m(\widehat{CBE}) &= 30^\circ \text{ olur.} \end{aligned}$$

$$\begin{aligned} m(\widehat{DCB}) + m(\widehat{CBE}) &= 180^\circ \\ \alpha + 30^\circ &= 180^\circ \\ \alpha &= 150^\circ \text{ olur.} \end{aligned}$$

Cevap: D



$$\begin{aligned} m(\widehat{ABC}) + m(\widehat{CFE}) &= m(\widehat{BCF}) \\ m(\widehat{ABC}) + 20^\circ &= 75^\circ \Rightarrow m(\widehat{ABC}) = 55^\circ \\ m(\widehat{KBE}) + m(\widehat{BEF}) &= 180^\circ \\ 70^\circ + \alpha &= 180^\circ \Rightarrow \alpha = 110^\circ \text{ olur.} \end{aligned}$$

Cevap: A

$$6. \quad 1^\circ = 60', \quad 1' = 60'' \text{ ise, } 1^\circ = 3600'' \text{ dir.}$$

$$\begin{array}{r} 416062 \quad | \quad 3600 \\ \underline{3600} \quad | \quad 115^\circ \\ 5606 \\ \underline{3600} \\ 20062 \\ \underline{18000} \\ 2062 \quad | \quad 60' \\ \underline{180} \quad | \quad 34' \\ 262 \\ \underline{240} \\ 22'' \end{array}$$

$$416062'' = 115^\circ 34' 22'' \text{ bulunur.}$$

Cevap: A

$$\begin{aligned} 7. \quad m(\widehat{DAB}) &= m(\widehat{KDC}) = 38^\circ \\ &\text{(iç ters açı)} \\ m(\widehat{FDK}) + m(\widehat{KDC}) &= 90^\circ \\ m(\widehat{FDK}) + 38^\circ &= 90^\circ \\ m(\widehat{FDK}) &= 52^\circ \end{aligned}$$

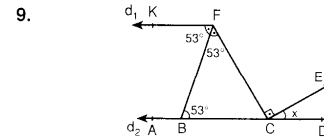
$$\begin{aligned} m(\widehat{FDK}) + m(\widehat{FDE}) &= 180^\circ \\ 52^\circ + x &= 180^\circ \text{ ise, } x = 128^\circ \text{ olur.} \end{aligned}$$

Cevap: D

$$\begin{aligned} 8. \quad m(\widehat{CDE}) &= m(\widehat{EDF}) = a \\ m(\widehat{ABE}) &= m(\widehat{EBF}) = b \\ m(\widehat{DFB}) &= 360^\circ - 224^\circ \\ m(\widehat{DFB}) &= 136^\circ \end{aligned}$$

$$\begin{aligned} 2a + 2b &= 136^\circ \text{ ise, } a + b = 68^\circ \\ a + b &= x \text{ ise, } x = 68^\circ \text{ olur.} \end{aligned}$$

Cevap: E



$$\begin{aligned} m(\widehat{KFB}) &= m(\widehat{FBC}) = 53^\circ \text{ (iç ters açı)} \\ m(\widehat{KFC}) &= m(\widehat{FCD}) \text{ (iç ters açı)} \\ 106^\circ &= 90^\circ + x \text{ ise, } x = 16^\circ \text{ olur.} \end{aligned}$$

Cevap: C

$$\begin{aligned} 10. \quad m(\widehat{FEA}) &= \alpha \\ m(\widehat{KCD}) &= \beta \end{aligned}$$

$$\begin{aligned} m(\widehat{BFE}) + m(\widehat{FDC}) &= 180^\circ \text{ (Karşıt durumlu açılar)} \\ m(\widehat{BFE}) + 120^\circ &= 180^\circ \text{ ise, } m(\widehat{BFE}) = 60^\circ \\ m(\widehat{A}) + m(\widehat{ABK}) &= 180^\circ \text{ (Karşıt durumlu açılar)} \\ 40^\circ + m(\widehat{ABK}) &= 180^\circ \text{ ise, } m(\widehat{ABK}) = 140^\circ \\ m(\widehat{ABK}) &= m(\widehat{DCK}) = 140^\circ \text{ (Yöndeş açılar)} \\ \beta &= 140^\circ \\ \alpha + 40^\circ &= 60^\circ \text{ (AFE üçgeninde)} \\ \alpha &= 20^\circ \\ \alpha + \beta &= 20^\circ + 140^\circ = 160^\circ \text{ olur.} \end{aligned}$$

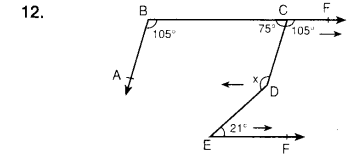
Cevap: E

$$\begin{aligned} 11. \quad m(\widehat{A}) &= x \\ m(\widehat{B}) &= x + 2^\circ \\ m(\widehat{C}) &= x + 4^\circ \\ m(\widehat{A}) + m(\widehat{B}) + m(\widehat{C}) &= 360^\circ \end{aligned}$$

$$\begin{aligned} x + x + 2^\circ + x + 4^\circ &= 360^\circ \\ 3x + 6 &= 360^\circ \\ 3x &= 354^\circ \text{ ise, } x = 118^\circ \end{aligned}$$

$$\begin{aligned} m(\widehat{EDB}) + m(\widehat{B}) &= 180^\circ \text{ (Karşıt durumlu açılar)} \\ \alpha + x + 2^\circ &= 180^\circ \\ \alpha + 118^\circ + 2^\circ &= 180^\circ \\ \alpha + 120^\circ &= 180^\circ \text{ ise, } \alpha = 60^\circ \end{aligned}$$

Cevap: D

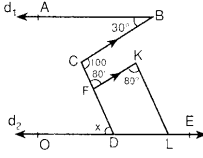


$$\begin{aligned} m(\widehat{B}) + m(\widehat{C}) &= 180^\circ \\ 105^\circ + m(\widehat{C}) &= 180^\circ \\ m(\widehat{C}) &= 75^\circ \\ m(\widehat{FCD}) + m(\widehat{BCD}) &= 180^\circ \\ m(\widehat{FCD}) &= 105^\circ \\ 105^\circ + 21^\circ &= x \text{ (zik-zak açı kuralı)} \\ x &= 126^\circ \end{aligned}$$

Cevap: D

$$\begin{aligned} 13. \quad m(\widehat{A}) &= m(\widehat{C}) \\ &\text{olduğundan} \\ [AB] &\parallel [DK] \text{ olur.} \\ m(\widehat{B}) &= m(\widehat{DKF}) = x \\ &\text{(yöndeş açılar)} \\ m(\widehat{KDE}) + m(\widehat{DKF}) &= 180^\circ \\ 125^\circ + x &= 180^\circ \text{ ise, } x = 55^\circ \text{ olur.} \end{aligned}$$

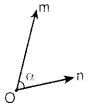
Cevap: E

14. 

$m(\widehat{CFK}) = m(\widehat{FKL}) = 80^\circ$
(iç ters açılar)
 $m(\widehat{C}) + m(\widehat{CFK}) = 180^\circ$
(Karşit durumlu açılar)
 $m(\widehat{C}) + 80^\circ = 180^\circ$
 $m(\widehat{C}) = 100^\circ$

$m(\widehat{B}) + m(\widehat{CDO}) = m(\widehat{C})$ olduğundan
 $30^\circ + x = 100^\circ$
 $x = 70^\circ$ olur.

Cevap: D

15. 

m : Yelkovan
n : Akrep
 α : küçük açı
d : dakika
s : saat

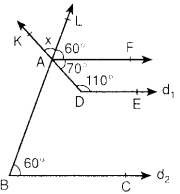
$$\alpha = \frac{|11.d - 60.s|}{2}$$

$$\alpha = \frac{|11.36 - 60.12|}{2} = \frac{|396 - 720|}{2}$$

$$\alpha = \frac{|-324|}{2} = \frac{324}{2}$$

$$\alpha = 162^\circ \text{ olur.}$$

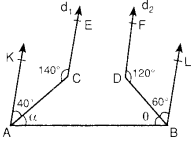
Cevap: D

16. 

[AF] // [DE] çizelim.
 $m(\widehat{B}) = m(\widehat{LAF}) = 60^\circ$
(yöndeş açılar)
 $m(\widehat{FAD}) + m(\widehat{D}) = 180^\circ$
(Karşit durumlu açılar)
 $m(\widehat{FAD}) = 70^\circ$

K, A, D noktaları doğrusal
 $x + 60^\circ + 70^\circ = 180^\circ$
 $x + 130^\circ = 180^\circ$ ise, $x = 50^\circ$ olur.

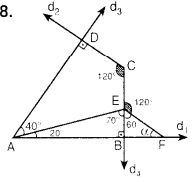
Cevap: D

17. 

[AK] // [CE]
[DF] // [BL]
[AK] // [BL]

$m(\widehat{KAC}) + m(\widehat{ACE}) = 180^\circ$
 $m(\widehat{KAC}) + 140^\circ = 180^\circ$ ise, $m(\widehat{KAC}) = 40^\circ$
 $m(\widehat{LBD}) + 120^\circ = 180^\circ$ ise, $m(\widehat{LBD}) = 60^\circ$
 $m(\widehat{A}) + m(\widehat{B}) = 180^\circ$ (Karşit durumlu açılar)
 $40^\circ + \alpha + 60^\circ + \theta = 180^\circ$
 $\alpha + \theta = 80^\circ$ olur.

Cevap: C

18. 

$m(\widehat{B}) + m(\widehat{D}) = 180^\circ$ ise
 $m(\widehat{A}) + m(\widehat{C}) = 180^\circ$ dir.
 $60^\circ + m(\widehat{C}) = 180^\circ$
 $m(\widehat{C}) = 120^\circ$

[DC] // [EF] ise, $m(\widehat{C}) = m(\widehat{E}) = 120^\circ$ olur.
 $m(\widehat{BEF}) + 120^\circ = 180^\circ$ ise, $m(\widehat{BEF}) = 60^\circ$
BEF üçgeninde
 $90^\circ + 60^\circ + \alpha = 180^\circ$
 $150^\circ + \alpha = 180^\circ$ ise, $\alpha = 30^\circ$ olur.

Cevap: D