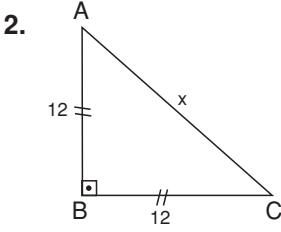


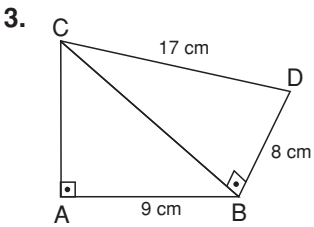
Pisagor bağıntısından;  
 $x^2 = 8^2 + 10^2 = 164$   
 $x = 2\sqrt{41}$



$|AC| = x$  olsun.  
 $x^2 = 12^2 + 12^2 \Rightarrow x^2 = 288$   
 $x = 12\sqrt{2}$

**Kısa yol:**

ABC ikizkenar üçgen olduğundan  
 $|AC| = |AB| = |BC| \cdot \sqrt{2}$

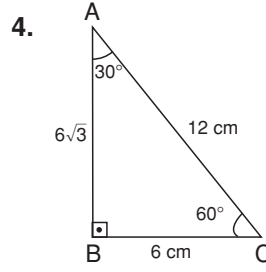


$\widehat{BCD}$ 'inde;  
 $|BC|^2 + 8^2 = 17^2$  (Pisagor)  
 $|BC| = 15$  bulunur.  
 $\widehat{ABC}$ 'inde;  
 $|BC|^2 = |AC|^2 + |AB|^2$  (Pisagor)  
 $15^2 = |AC|^2 + 9^2$   
 $|AC| = 12 \text{ cm}$  bulunur.

Cevap: C

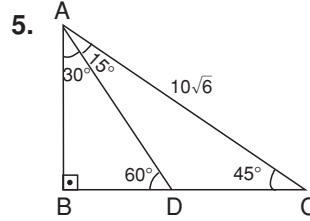
Cevap: C

Cevap: B



$90^\circ \rightarrow 12 \text{ cm}$   
 $30^\circ \rightarrow 6 \text{ cm}$   
 $60^\circ \rightarrow 6\sqrt{3} \text{ cm}$   
 $(90^\circ - 30^\circ - 60^\circ \text{ üçgeni})$

Cevap: C



$s(\widehat{ACD}) + s(\widehat{DAC}) = s(\widehat{ADB})$   
 $s(\widehat{ACD}) + 15^\circ = 60^\circ$   
 $s(\widehat{ACD}) = 45^\circ$  olur.  
 $s(\widehat{BAC}) = 45^\circ$  olur.

$\widehat{ABC}$  ikizkenar üçgendir.

$|AC| = (|AB| = |BC|) \cdot \sqrt{2}$  dir.

$(90^\circ - 45^\circ - 45^\circ)$   
 $10\sqrt{6} = |AB| \cdot \sqrt{2} \Rightarrow \frac{10\sqrt{6}}{\sqrt{2}} = |AB|$

$\Rightarrow |AB| = 10\sqrt{3}$  bulunur.

$\widehat{ABD}$ 'inde;

$90^\circ \rightarrow |AD|$

$30^\circ \rightarrow \frac{|AD|}{2}$

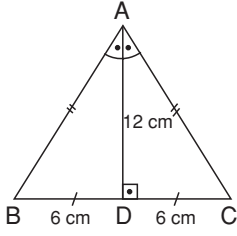
$60^\circ \rightarrow \frac{|AD|}{2} \cdot \sqrt{3} = |AB|$  olur.  $(90^\circ - 30^\circ - 60^\circ)$

$\Rightarrow |AB| = \frac{|AD|}{2} \sqrt{3} \Rightarrow 10\sqrt{3} = \frac{|AD|}{2} \sqrt{3}$

$\Rightarrow |AD| = 20 \text{ cm}$  bulunur.

Cevap: C

6.



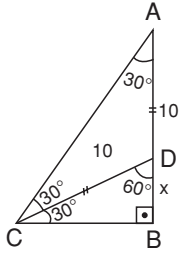
$\widehat{ABD}$ 'ninde;

$$|AB|^2 = 12^2 + 6^2 \text{ (Pisagor)}$$

$$|AB|^2 = 144 + 36 = 180$$

$$|AB| = 6\sqrt{5} \text{ bulunur.}$$

7.



$$|AD| = |DC| \Rightarrow s(\widehat{ACD}) = s(\widehat{CAD}) = 30^\circ \text{ olur.}$$

$$s(\widehat{CDB}) = s(\widehat{ACD}) + s(\widehat{CAD}) = 30^\circ + 30^\circ = 60^\circ \text{ olur.}$$

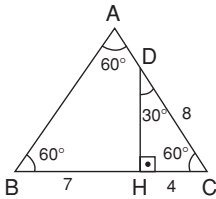
$$\Rightarrow s(\widehat{DCB}) = 30^\circ \text{ elde edilir.}$$

$\widehat{BDC}$ 'ninde ( $90^\circ - 30^\circ - 60^\circ$ ) özelliğinden;

$$90^\circ \rightarrow 10 \text{ cm}$$

$$30^\circ \rightarrow \frac{10}{2} = 5 \text{ cm} = x$$

8.



ABC eşkenar üçgen olduğundan

$$|AB| = |AC| = |BC| = 11 \text{ cm olur.}$$

Ayrıca

$$s(\widehat{A}) = s(\widehat{B}) = s(\widehat{C}) = 60^\circ \text{ dir.}$$

$$\Rightarrow s(\widehat{C}) = 60^\circ \text{ ve } s(\widehat{HDC}) = 30^\circ \text{ olur.}$$

$\widehat{HDC}$ 'ninde ( $30^\circ - 60^\circ - 90^\circ$ ) özelliğinden

$$90 \rightarrow |DC|$$

$$30^\circ \rightarrow \frac{|DC|}{2} = 4$$

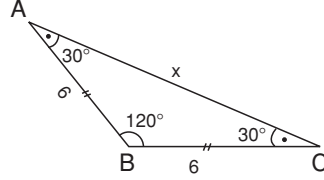
$$\Rightarrow |DC| = 2 \cdot 4 = 8 \text{ cm bulunur.}$$

$$|AC| = 11 = |AD| + |DC|$$

$$11 = |AD| + 8 \Rightarrow |AD| = 3 \text{ cm bulunur.}$$

Cevap: B

9.



ABC ikizkenar üçgendir.

$$|AB| = |BC| \Rightarrow s(\widehat{BAC}) = s(\widehat{ACB}) = 30^\circ \text{ olur.}$$

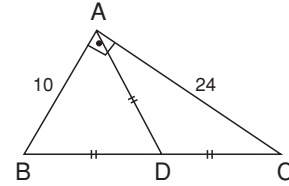
( $120^\circ - 30^\circ - 30^\circ$ ) özelliğinden;

$$|AC| = x = (|AB| = |BC| = 6) \cdot \sqrt{3}$$

$$\Rightarrow x = 6\sqrt{3} \text{ bulunur.}$$

Cevap: C

10.



$s(\widehat{A}) = 90^\circ$  olur. (Muhteşem üçlü)

Pisagor bağıntısından

$$|BC|^2 = 10^2 + 24^2$$

$$|BC|^2 = 676$$

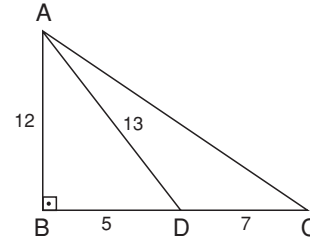
$$|BC| = 26 \text{ cm bulunur.}$$

$$|AD| = \frac{|BC|}{2} = \frac{26}{2} = 13 \text{ cm}$$

Cevap: A

Cevap: D

11.



$$|AB|^2 + 5^2 = 13^2 \text{ (Pisagor)}$$

$$|AB| = 12 \text{ cm bulunur.}$$

$$|AB| = |BC| = 12 \text{ cm olur.}$$

ABC ikizkenar üçgendir.

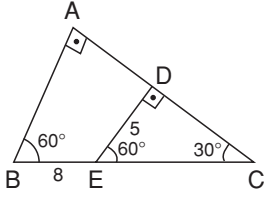
$$|AC| = |AB| \cdot \sqrt{2}$$

$$|AC| = 12 \cdot \sqrt{2} \text{ bulunur.}$$

$$(90^\circ - 45^\circ - 45^\circ)$$

Cevap: B

12.



ABC üçgeninde

$s(\widehat{C}) = 30^\circ$  olur.

$\Rightarrow \widehat{DEC} = 60^\circ$  bulunur.

$\widehat{DEC}$ 'ninde  $(90^\circ - 30^\circ - 60^\circ)$  özelliğinden

$90^\circ \rightarrow |EC|$

$$30^\circ \rightarrow \frac{|EC|}{2} = 5$$

$$60^\circ \rightarrow \frac{|EC|}{2} \cdot \sqrt{3} = 5\sqrt{3} \text{ olur.}$$

$$\Rightarrow \frac{|EC|}{2} = 5 \Rightarrow |EC| = 10 \text{ cm bulunur.}$$

$\Rightarrow |BC| = |BE| + |EC| = 8 + 10 = 18 \text{ cm}$  bulunur.

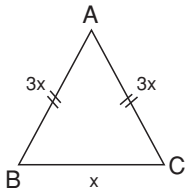
$\widehat{ABC}$ 'ninde  $(90^\circ - 30^\circ - 60^\circ)$  özelliğinden

$90^\circ \rightarrow |BC| = 18$

$$30^\circ \rightarrow \frac{|BC|}{2} = |AB|$$

$$\Rightarrow |AB| = \frac{|BC|}{2} = \frac{18}{2} = 9 \text{ cm bulunur.}$$

13.



ABC ikizkenar üçgen ve

$|AB| = |AC|$  olsun.

$|BC| = x$

$|AB| = |AC| = 3x$  olur.

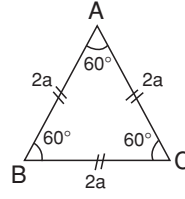
$\widehat{ABC} = 3x + 3x + x = 7x$  olur.

$|BC| = x = 9 \text{ cm}$  (Taban uzunluğu)'dir.

$\Rightarrow \widehat{ABC} = 7x = 7 \cdot 9 = 63 \text{ cm}$

Cevap: C

14.



ABC ikizkenar üçgen

ve  $|AB| = |AC|$  olsun.

$s(\widehat{A}) = 60^\circ$  olsun.

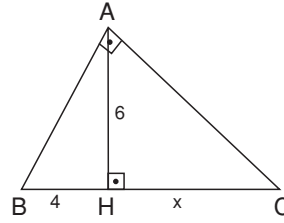
$\Rightarrow s(\widehat{B}) = s(\widehat{C}) = 60^\circ$  olur.

ABC eşkenar üçgendir.

$\widehat{ABC} = 2a + 2a + 2a = 6a$

Cevap: D

15.



Öklid kuralına göre

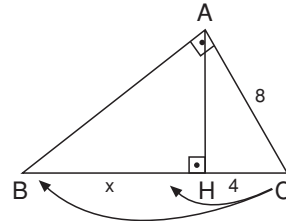
$$6^2 = 4 \cdot x$$

$$36 = 4 \cdot x$$

$$\boxed{x = 9 \text{ cm}} \text{ bulunur.}$$

Cevap: C

16.



Öklid kuralına göre;

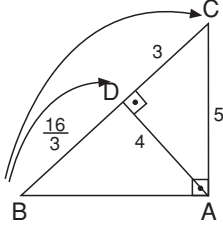
$$8^2 = 4 \cdot (4 + x)$$

$$64 = 4 \cdot (4 + x) \Rightarrow 16 = 4 + x$$

$$\boxed{x = 12 \text{ cm}}$$

Cevap: C

17.



ADC'inde pisagor bağıntısından

$$|AD|^2 + 3^2 = 5^2 \Rightarrow |AD| = 4 \text{ cm}$$

Öklid kuralına göre,

$$|AD|^2 = |DC| \cdot |BD|$$

$$4^2 = 3 \cdot |BD| \Rightarrow |BD| = \frac{16}{3} \text{ cm}$$

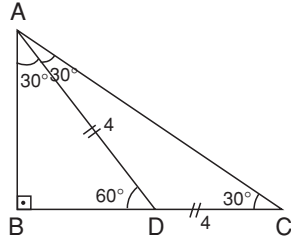
Öklid kuralına göre;

$$|AB|^2 = |BD| \cdot |BC|$$

$$|AB|^2 = \frac{16}{3} \cdot \left( \frac{16}{3} + 3 \right) = \frac{25}{3} \cdot \frac{16}{3}$$

$$\Rightarrow |AB| = \frac{5 \cdot 4}{3} = \frac{20}{3} \text{ cm bulunur.}$$

18.



$$s(\widehat{ADB}) = s(\widehat{ACD}) + s(\widehat{CAD})$$

$$60^\circ = 30^\circ + s(\widehat{CAD})$$

$$s(\widehat{CAD}) = 30^\circ \text{ olur.}$$

CDA ikizkenar üçgen olur.

$$|AD| = |DC| = 4 \text{ cm'dir.}$$

ADC'inde  $(120^\circ - 30^\circ - 30^\circ)$  özelliğinden

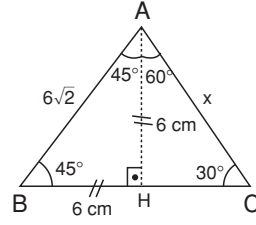
$$|AC| = (|AD| + |DC| = 4) \cdot \sqrt{3}$$

$$|AC| = 4 \cdot \sqrt{3}$$

Cevap: D

OKS DERGİSİ

19.



$[AH] \perp [BC]$  olacak şekilde

$[AH]$  çizilir.

$s(\widehat{BAH}) = 45^\circ$  olur.

$\widehat{ABH}$  ikizkenar üçgen oldu.

$|AH| = |BH|$ 'dir.

$$|AB| = (|AH| + |BH|) \cdot \sqrt{2} \Rightarrow 6\sqrt{2} = |AH| \cdot \sqrt{2}$$

$$\Rightarrow |AH| = 6 \text{ cm bulunur.}$$

$s(\widehat{HAC}) = 60^\circ$  olur.

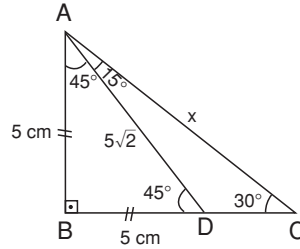
HAC'inde  $(90^\circ - 30^\circ - 60^\circ)$ 'dan

$$90^\circ \rightarrow x$$

$$30^\circ \rightarrow \frac{x}{2} = 6 \text{ cm} \Rightarrow \frac{x}{2} = 6 \Rightarrow x = 12 \text{ cm}$$

Cevap: A

20.



$$s(\widehat{DAC}) + s(\widehat{ACD}) = s(\widehat{ADB}) \text{ 'dir.}$$

$$15^\circ + 30^\circ = 45^\circ = s(\widehat{ADB})$$

$s(\widehat{BAD}) = 45^\circ$  olur.

$\widehat{ABD}$  ikizkenar üçgen oldu.

$|AB| = |BD|$ 'dir.

$$|AD| = 5\sqrt{2} = |AB| \cdot \sqrt{2} \Rightarrow |AB| = 5 \text{ cm olur.}$$

$(90^\circ - 45^\circ - 45^\circ)$

$\widehat{ABC}$ 'inde  $(90^\circ - 30^\circ - 60^\circ)$ 'dan

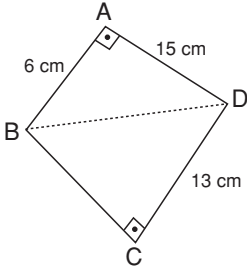
$$90^\circ \rightarrow x$$

$$30^\circ \rightarrow \frac{x}{2} = 5$$

$$\Rightarrow x = 10 \text{ cm bulunur.}$$

Cevap: A

1.



[BD] çizilir.

 $\widehat{ABD}$ 'ninde;

$$|BD|^2 = 6^2 + 15^2$$

 $\widehat{BCD}$ 'ninde;

$$|BD|^2 = |BC|^2 + 3^2$$

$$\Rightarrow 6^2 + 15^2 = |BC|^2 + 13^2$$

$$261 = |BC|^2 + 169$$

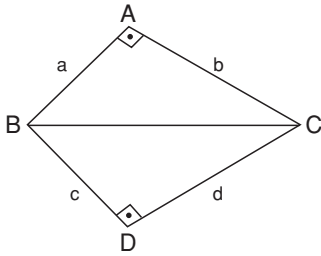
$$261 - 169 = |BC|^2$$

$$92 = |BC|^2$$

$$|BC| = 2\sqrt{23} \text{ cm} \text{ bulunur.}$$

Cevap: B

2.



$$\widehat{BAC}$$
'ninde  $\rightarrow |BC|^2 = a^2 + b^2$

$$\widehat{BDC}$$
'ninde  $\rightarrow |BC|^2 = c^2 + d^2$

$$a^2 + b^2 = c^2 + d^2 \text{ elde edilir.}$$

$$a^2 + b^2 + c^2 + d^2 = 128$$

$$\underbrace{a^2 + b^2}_{a^2 + b^2}$$

$$a^2 + b^2 + a^2 + b^2 = 128$$

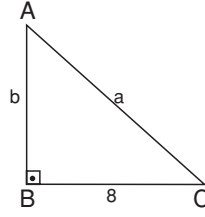
$$\cancel{2} (a^2 + b^2) = \cancel{1} 28$$

$$a^2 + b^2 = 64 \text{ olur.}$$

$$|BC|^2 = a^2 + b^2 = 64 \Rightarrow |BC| = 8 \text{ cm}$$

Cevap: D

3.



Pisagor bağıntısından;

$$a^2 = b^2 + 8^2$$

$$a^2 - b^2 = 64$$

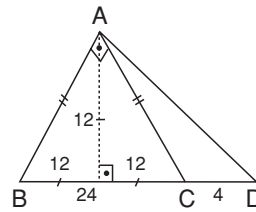
$$\frac{(a-b)(a+b)}{4} = 64$$

$$\Rightarrow 4 \cdot (a+b) = 64 \Rightarrow a+b = 16 \text{ bulunur.}$$

$$\text{Ç}(\widehat{ABC}) = a + b + 8 = 16 + 8 = 24 \text{ cm}$$

Cevap: B

4.

[BC]  $\perp$  [AD] olacak şekilde

[AD] çizilir.

 $\widehat{ABC}$  ikizkenar üçgen olduğundan

[AD] kenarortay olur.

$$|BD| = |DC| \text{ dir.}$$

Ayrıca  $s(\widehat{A}) = 90^\circ$  olduğundan

|AD| = |BD| = |DC| olur. (Muhteşem üçlü)

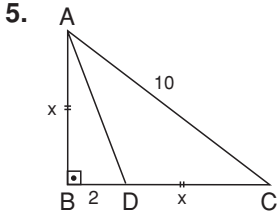
 $\widehat{ADC}$ 'ninde;

$$|AD|^2 = |AH|^2 + |HD|^2$$

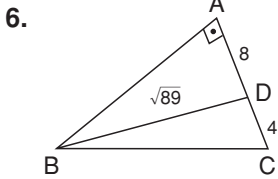
$$|AD|^2 = 12^2 + 16^2$$

$$|AD| = 20 \text{ cm} \text{ bulunur.}$$

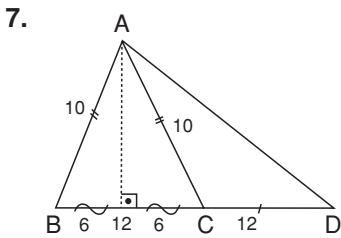
Cevap: C



$|DC| = |AB| = x$  olsun.  
 $\widehat{ABC}$ 'ninde;  
 $|AC|^2 = |AB|^2 + |BC|^2$   
 $10^2 = x^2 + (x + 2)^2$   
 $100 = x^2 + x^2 + 4x + 4$   
 $50 = x^2 + 2x + 2$   
 $x^2 + 2x - 48 = 0$   
 $(x + 8)(x - 6) = 0$   
 $x - 6 = 0 \Rightarrow \boxed{x = 6}$  bulunur.  
 $\widehat{ABD}$ 'ninde;  
 $|AD|^2 = |BD|^2 + |AB|^2$   
 $|AD|^2 = 2^2 + 6^2$   
 $|AD|^2 = 40 \Rightarrow \boxed{|AD| = 2\sqrt{10}}$



$\widehat{ABD}$ 'ninde  $\rightarrow |BD|^2 = 8^2 + |AB|^2$   
 $(\sqrt{89})^2 = 8^2 + |AB|^2$   
 $89 - 64 = |AB|^2 \Rightarrow \boxed{|AB| = 5 \text{ cm}}$   
 $\widehat{ABC}$ 'ninde  $\rightarrow |BC|^2 = |AC|^2 + |AB|^2$   
 $|BC|^2 = 12^2 + 5^2$   
 $\boxed{|BC| = 13 \text{ cm}}$



$[AH] \perp [BC]$  olacak şekilde  
 $[AH]$  çizilir.

$|BH| = |HC| = 6 \text{ cm}$  olur.  
 (ikizkenar üçgende yükseklik kenarortay doğrusudur).

$\widehat{AHC}$ 'ninde  $\rightarrow |AH|^2 + 6^2 = 10^2$

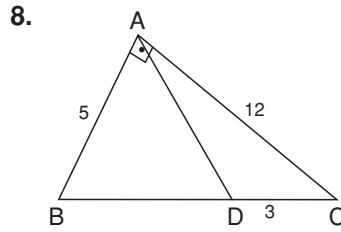
$\Rightarrow \boxed{|AH| = 8 \text{ cm}}$  bulunur.

$\widehat{AHD}$ 'ninde  $\rightarrow |AD|^2 = |AH|^2 + |HD|^2$

$|AD|^2 = 8^2 + 18^2$

$\boxed{|AD| = 2\sqrt{97}}$

Cevap: D



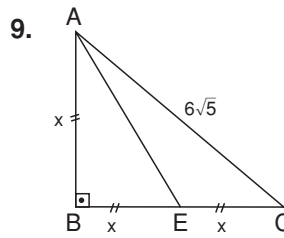
$\widehat{ABC}$ 'ninde  $\rightarrow |BC|^2 = 5^2 + 12^2$

$\boxed{|BC| = 13 \text{ cm}}$  bulunur.

$|BC| - |BD| = |DC| = 3$

$13 - |BD| = 3 \Rightarrow |BD| = 10 \text{ cm}$

Cevap: C



$|AB| = |BE| = |EC| = x$  olsun.

$\Rightarrow \widehat{ABC}$ 'ninde  $\rightarrow |AC|^2 = |AB|^2 + |BC|^2$

$(6\sqrt{5})^2 = x^2 + (2x)^2$

$180 = x^2 + 4x^2$

$5x^2 = 180$

$x^2 = 36 \Rightarrow \boxed{x = 6 \text{ cm}}$

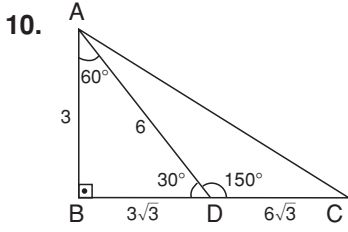
bulunur.

ABE üçgeni ikizkenar üçgen olduğundan

$|AE| = |AB| \cdot \sqrt{2}$  ( $90^\circ - 45^\circ - 45^\circ$ )

$\Rightarrow |AE| = 6\sqrt{2}$  bulunur.

Cevap: C



$$s(\widehat{ADB}) = 180^\circ - 150^\circ = 30^\circ \text{ dir.}$$

$$s(\widehat{BAD}) = 60^\circ \text{ olur.}$$

$$\widehat{ABD}'\text{ninde} \rightarrow 90^\circ \rightarrow 6$$

$$(30^\circ - 60^\circ - 90^\circ \text{ kuralı}) \quad 30^\circ \rightarrow |AB| = \frac{6}{2} = 3$$

$$60^\circ \rightarrow |BD| = 3\sqrt{3}$$

olur.

$\widehat{ABC}'$ nin de pisagor bağıntısından;

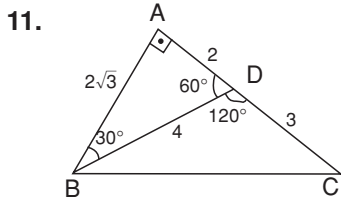
$$|AC|^2 = |AB|^2 + |BC|^2$$

$$|AC|^2 = 3^2 + (9\sqrt{3})^2$$

$$|AC|^2 = 9 + 243 \Rightarrow |AC|^2 = 252$$

$$|AC| = 6\sqrt{7}$$

Cevap: A



$$s(\widehat{BDA}) = 180^\circ - 120^\circ = 60^\circ \text{ dir.}$$

$$s(\widehat{ABC}) = 30^\circ \text{ olur.}$$

$\widehat{ABD}'$ nin de;

$$90^\circ \rightarrow 4$$

$$30^\circ \rightarrow |AD| = \frac{4}{2} = 2$$

$$60^\circ \rightarrow |AB| = 2\sqrt{3}$$

elde edilir.

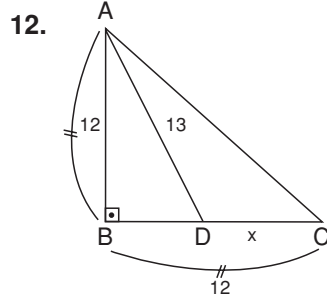
$\widehat{ABC}'$ nin de pisagor bağıntısından

$$|BC|^2 = |AB|^2 + |AC|^2$$

$$|BC|^2 = (2\sqrt{3})^2 + 5^2 = 37$$

$$|BC| = \sqrt{37} \text{ cm bulunur.}$$

Cevap: A



$\widehat{ABD}'$ nin de;

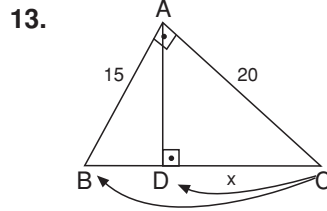
$$13^2 = 12^2 + |BD|^2 \Rightarrow |BD| = 5 \text{ cm bulunur.}$$

$$|BC| = 12 = |BD| + |DC|$$

$$12 = 5 + x$$

$$x = 7 \text{ cm}$$

Cevap: D



$\widehat{ABC}'$ nin de pisagor bağıntısından;

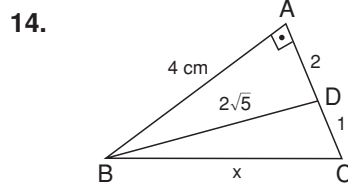
$$|BC|^2 = 15^2 + 20^2 \Rightarrow |BC| = 25 \text{ cm bulunur.}$$

Öklid kuralına göre;

$$|AC|^2 = |DC| \cdot |CB| \Rightarrow 20^2 = x \cdot 25$$

$$x = \frac{400}{25} = 16 \text{ cm}$$

Cevap: D



$\widehat{ABD}'$ nin de;

$$|BD|^2 = |AD|^2 + |AB|^2 \text{ (Pisagor)}$$

$$(2\sqrt{5})^2 = 2^2 + |AB|^2$$

$$20 = 4 + |AB|^2 \Rightarrow |AB| = 4 \text{ cm}$$

$\widehat{ABC}'$ nin de;

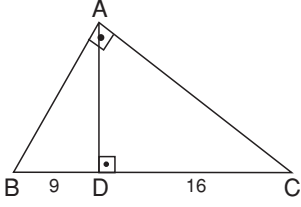
$$|BC|^2 = |AB|^2 + |AC|^2 \text{ (Pisagor)}$$

$$x^2 = 4^2 + 3^2 \text{ (3-4-5 üçgeni)}$$

$$x = 5 \text{ cm}$$

Cevap: A

15.

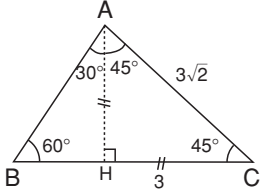


Öklid kuralından;

$$|AD|^2 = 9 \cdot 16$$

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

16.

[AH]  $\perp$  [BC] olacak şekilde

[AH] çizilir.

$$s(\widehat{HAC}) = 45^\circ \quad s(\widehat{BAH}) = 30^\circ$$

elde edilir.

 $\widehat{AHC}$  ikizkenar üçgen olur.

|AH| = |HC|'dir.

$$|AC| = |AH| \cdot \sqrt{2} \quad (90^\circ - 45^\circ - 45^\circ)$$

$$3\sqrt{2} = |AH| \cdot \sqrt{2}$$

$$|AH| = 3 \text{ cm olur.}$$

 $\widehat{ABH}$ 'ninde;

$$90^\circ \rightarrow |AB|$$

$$60^\circ \rightarrow \frac{|AB|}{2} \cdot \sqrt{3} = 3$$

$$|AB| = \frac{6}{\sqrt{3}} = \frac{6\sqrt{3}}{3} = 2\sqrt{3} \text{ olur.}$$

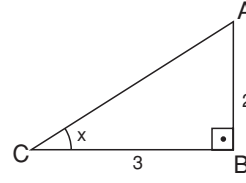
$$17. \sin 30^\circ + \cos 60^\circ = \frac{1}{2} + \frac{1}{2} = 1$$

Cevap: B

Cevap: B

Cevap: C

18.



ABC dik üçgenini çizelim:

$$s(\widehat{ACB}) = x \text{ olsun.}$$

$$\tan x = \frac{|AB|}{|BC|} = \frac{2}{3}$$

$$\Rightarrow |AB| = 2, |BC| = 3 \text{ olsun.}$$

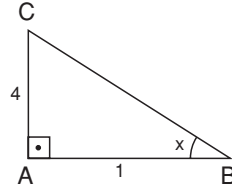
$$\Rightarrow \cot x = \frac{|BC|}{|AB|} = \frac{3}{2} \text{ olur.}$$

Hatırlatma:

$$\cot x = \frac{1}{\tan x}$$

Cevap: B

19.



$$\tan x = \frac{|AC|}{|AB|} \Rightarrow |AB| = 1 \text{ olur.}$$

$$|AB| = 4 \cot x \Rightarrow \cot x = \frac{|AB|}{4} \text{ olur.}$$

$$\cot x = \frac{|AB|}{4} = \frac{1}{|AC|} \Rightarrow |AB| \cdot |AC| = 4$$

$$\Rightarrow |AC| = 4 \text{ bulunur.}$$

$$\Rightarrow \tan x = \frac{4}{1} = 4 \text{ bulunur.}$$

Cevap: D

$$20. A) \cot x \cdot \tan x = \frac{\cos x}{\sin x} \cdot \frac{\sin x}{\cos x} = 1$$

$$B) \sin 60^\circ = \cos 30^\circ \text{ dir.}$$

$$(\alpha + \theta = 90^\circ \Rightarrow \sin \alpha = \cos \theta$$

$$\sin \theta = \cos \alpha)$$

$$C) \frac{\sin 60^\circ}{\sin 30^\circ} = \frac{\sin 60^\circ}{\cos 60^\circ} = \tan 60^\circ \text{ dir.}$$

$$D) \sin 60^\circ \cdot \cos 60^\circ = \frac{\sqrt{3}}{2} \cdot \frac{1}{2} = \frac{\sqrt{3}}{4} \text{ 'tür.}$$

D şıkkı yanlıştır.

Cevap: D

$$1. \frac{3}{\sin x} = \frac{4}{\cos x}$$

$$\frac{\sin x}{\cos x} = \frac{3}{4}$$

$$\tan x = \frac{3}{4}$$

Cevap: A

$$2. \frac{\sin x}{\cos x} + \frac{\cos x}{\sin x} = \frac{\sin^2 x + \cos^2 x}{\sin x \cos x}$$

$$= \frac{1}{\sin x \cdot \cos x} = \frac{1}{3} \text{ bulunur.}$$

**Uyarı:** x açısı ne olursa olsun  $\sin^2 x + \cos^2 x = 1$ 'dir.

Cevap: A

$$3. 2\sin x = 3\cos x$$

$$\frac{\sin x}{\cos x} = \frac{3}{2} \Rightarrow \tan x = \frac{3}{2}$$

Cevap: B

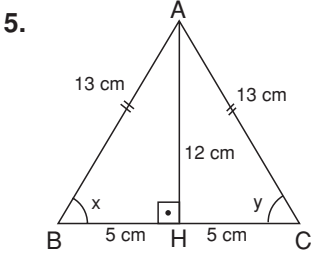
$$4. \frac{\cos x - \sin x}{\cos x + \sin x} = \frac{3}{4}$$

$$4\cos x - 4\sin x = 3\cos x + 3\sin x$$

$$\cos x = 7\sin x$$

$$\frac{\cos x}{\sin x} = 7 = \cot x \text{ 'tir.}$$

Cevap: D



$$\widehat{ABH} \text{ 'nden} \rightarrow |AH|^2 + 5^2 = 13^2$$

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

$$\Rightarrow \widehat{ABH} \text{ 'nde;}$$

$$\sin x = \frac{|AH|}{|AB|} = \frac{12}{13}$$

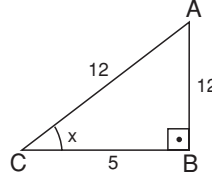
$$\widehat{AHC} \text{ 'nde;}$$

$$\cos y = \frac{|HC|}{|AC|} = \frac{5}{13}$$

$$\sin x + \cos y = \frac{12}{13} + \frac{5}{13} = \frac{17}{13}$$

Cevap: C

6.



ABC dik üçgenini çizelim:

$$\widehat{ACB} = x \text{ olsun}$$

$$\sin x = \frac{12}{13} = \frac{|AB|}{|AC|} \text{ 'dir.}$$

$$|AB| = 12, |AC| = 13 \text{ olsun.}$$

$\widehat{ABC}$  'nde;

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

$$|BC| = 5 \text{ cm olur.}$$

$$\cot x = \frac{|BC|}{|AB|} = \frac{5}{12} \text{ olur.}$$

Cevap: A

$$7. \frac{\tan x \cdot \cot x}{\sin^2 x + \cos^2 x} = \frac{1}{1} = 1$$

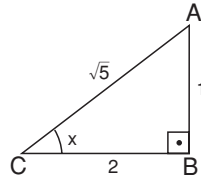
**Hatırlatma:**

$$\tan x \cdot \cot x = 1$$

$$\sin^2 x + \cos^2 x = 1 \text{ 'dir.}$$

Cevap: A

8.



ABC dik üçgenini çizelim:

$$\tan x = \frac{1}{2} = \frac{|AB|}{|BC|} \text{ 'dir.}$$

$$\Rightarrow |AB| = 1, |BC| = 2 \text{ olsun.}$$

$\widehat{ABC}$  'nde;

$$|AC|^2 = |AB|^2 + |BC|^2$$

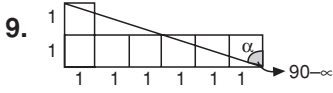
$$|AC|^2 = 1^2 + 2^2 = 5 \Rightarrow |AC| = \sqrt{5}$$

$$\sin x = \frac{|AB|}{|AC|} = \frac{1}{\sqrt{5}}, \cos x = \frac{|BC|}{|AC|} = \frac{2}{\sqrt{5}}$$

$$\sin x \cdot \cos x = \frac{1}{\sqrt{5}} \cdot \frac{2}{\sqrt{5}} = \frac{2}{5}$$

Cevap: C

OKS DERGİSİ

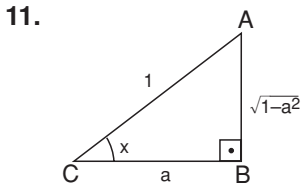


$$\cot(90 - \infty) = \tan \infty \text{ dir.}$$

$$\Rightarrow \cot(90 - \infty) = \frac{6}{2} = 3 \text{ t\u00fcr.}$$

$$\cot(90 - \infty) = \tan \infty = 3 \text{ bulunur.}$$

10.  $\sin x + \cos x = T$   
Her iki tarafın karesi alınırsa  
 $(\sin x + \cos x)^2 = T^2$   
 $\sin^2 x + 2\sin x \cdot \cos x + \cos^2 x = T^2$   
 $1 + 2\sin x \cdot \cos x = T^2$   
 $1 + 2 \cdot 4 = T^2$   
 $T^2 = 9$   
 $T = 3$



ABC dik \u00fc\u011fgenini \u00e7izelim:  
 $s(\widehat{ACB}) = x$  olsun.  
 $\cos x = \frac{|BC|}{|AC|} = a$   
 $\Rightarrow |BC| = a, |AC| = 1$  olsun.  
 $\widehat{ABC}$  ninde;  
 $1^2 = a^2 + |AB|^2$  (Pisagor)  
 $1 - a^2 = |AB|^2$   
 $|AB| = \sqrt{1 - a^2}$   
 $\sin x = \frac{|AB|}{|AC|} = \frac{\sqrt{1 - a^2}}{1} = \sqrt{1 - a^2}$

12. A)  $\sin 50^\circ$   
B)  $\cos 20^\circ = \sin 70^\circ$   
C)  $\cos 10^\circ = \sin 80^\circ$   
D)  $\sin 65^\circ$   
A\u00e7ı b\u00fcy\u00fcd\u00fck\u00e7e sin\u00fcs de\u011feri b\u00fcy\u00fcr.  
 $\Rightarrow \sin 80^\circ > \sin 70^\circ = \sin 65^\circ > \sin 50^\circ$   
 $\Rightarrow$  C \u015fikk\u00e2 en b\u00fcy\u00fckt\u00fcr.

Cevap: C

Cevap: C

**Uyarı:**

Bu tipteki sorularda her verileri aynı cinsten yazmalıyız.

13.  $\frac{\sin 15^\circ \cdot \tan 25^\circ \cdot \cos 10^\circ \cdot \tan 60^\circ}{\cos 75^\circ \cdot \cot 65^\circ \cdot \sin 80^\circ} =$   
 $= \tan 60^\circ = \sqrt{3}$

Cevap: B

**Uyarı:**

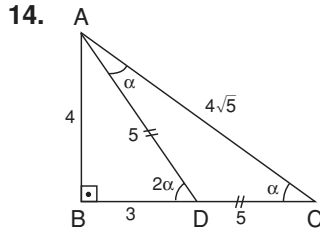
$$\sin 15^\circ = \cos 75^\circ$$

$$\tan 25^\circ = \cot 65^\circ$$

$$\cos 10^\circ = \sin 80^\circ$$

Cevap: D

OKS DERGİSİ



$$S(\widehat{DAC}) + S(\widehat{ACD}) = S(\widehat{ADB})$$

$$S(\widehat{DAC}) + \infty = 2\infty$$

$$S(\widehat{DAC}) = \infty \text{ olur.}$$

$\widehat{ADC}$  ikizkenar \u00fc\u011fgen olur.  
 $|AD| = |DC|$ 'dir.  
 $\sin 2\infty = \frac{|AB|}{|AD|} = \frac{4}{5}$

$|AB| = 4, |AD| = 5$  olsun.  
 $\widehat{ABD}$ 'ninde;  
 $5^2 = 4^2 + |BD|^2$  (Pisagor)  
 $|BD| = 3$  bulunur.  
 $\widehat{ABC}$  ninde;  
 $|AC|^2 = 4^2 + 8^2$   
 $|AC| = 4\sqrt{5}$  bulunur.  
 $\sin \infty = \frac{|AB|}{|AC|} = \frac{4}{4\sqrt{5}}$  tir.

Veriler yeterlidir.

Cevap: C

Cevap: C

$$15. \frac{\sin 10^\circ \cdot \cos 20^\circ \cdot \tan 25^\circ \cdot \cot 40^\circ}{\tan 50^\circ \cdot \cot 65^\circ \cdot \sin 70^\circ \cdot \cos 80^\circ} = 1$$

Cevap: B

**Uyarı:**

Birbirini  $90^\circ$ 'ye tamamlayan açılardan birinin sinüsünü diğerinin cosinüsüne birinin tanjantı diğerinin cotanjantına eşittir.

$$x + y = 90^\circ \Rightarrow \sin x = \cos y \\ \tan x = \cot y$$

$$16. \frac{\cos 70^\circ + \sin 20^\circ}{3 \cdot \sin 20^\circ} = \frac{\sin 20^\circ + \sin 20^\circ}{3 \sin 20^\circ} \\ = \frac{2 \sin 20^\circ}{3 \sin 20^\circ} = \frac{2}{3}$$

Cevap: B

$$17. \frac{\cos 20^\circ \cdot \cos 60^\circ \cdot \tan 20^\circ}{\cos 20^\circ} = \frac{1}{2} \cdot \frac{\sin 20^\circ}{\cos 20^\circ} = \frac{\sin 20^\circ}{2}$$

Cevap: C

18. A)  $\cot 36^\circ = \tan 54^\circ$  dir.  
B)  $\cot 36^\circ \neq \tan 36^\circ$  dir.

Cevap: B

$$19. \frac{\sin^4 x - \cos^4 x}{(\sin x - \cos x)(\sin x + \cos x)} \\ = \frac{(\sin^2 x)^2 - (\cos^2 x)^2}{\sin^2 x - \cos^2 x} \\ = \frac{(\sin^2 x - \cos^2 x)(\sin^2 x + \cos^2 x)}{\sin^2 x - \cos^2 x} \\ = \sin^2 x + \cos^2 x = 1 \text{ dir.}$$

Cevap: A

$$20. \text{A) } \tan 45^\circ + \sin 45^\circ = 1 + \frac{1}{\sqrt{2}} \\ = \frac{\sqrt{2} + 1}{\sqrt{2}} \text{ dir.}$$

$$\text{B) } \sin 30^\circ + \cos 30^\circ = \frac{1}{2} + \frac{\sqrt{3}}{2} = \frac{\sqrt{3} + 1}{2}$$

$$\text{C) } \sin 30^\circ + \cos 60^\circ = \frac{1}{2} + \frac{1}{2} = 1 \text{ dir.}$$

C şıkkı doğrudur.

Cevap: C

1.  $\tan x = \frac{1}{\cot x}$  tir.

$\tan x = 0,4 = \frac{4}{10} = \frac{1}{\cot x} \Rightarrow$

$\cot x = \frac{10}{4} = \frac{5}{2}$  olur.

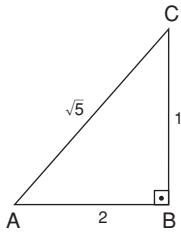
Cevap: C

2.  $\sin(90 - x) = \cos x$  tir.

$\sin^2 x + \sin^2(90 - x) = \sin^2 x + \cos^2 x = 1$  dir.

Cevap: A

3.



$\tan(\widehat{CAB}) = \frac{1}{2} = \frac{|CB|}{|AB|}$  dir.

$\Rightarrow |CB| = 1, |AB| = 2$  olsun.

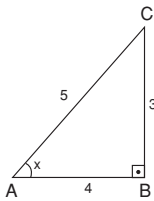
$|AC|^2 = |BC|^2 + |AB|^2$

$|AC|^2 = 1^2 + 2^2 = 5 \Rightarrow |AC| = \sqrt{5}$

$\Rightarrow \cos(\widehat{CAB}) = \frac{|AB|}{|AC|} = \frac{2}{\sqrt{5}}$  bulunur.

Cevap: A

4.



5.  $\sin x = 3$

$\sin x = \frac{3}{5}$  olur.

ABC dik üçgenini çizelim:

$s(\widehat{ACB}) = x$  olsun.

$\sin x = \frac{3}{5} = \frac{|AB|}{|AC|}$  dir.

$\Rightarrow |AB| = 3, |AC| = 5$  olsun.

$|AC|^2 = |AB|^2 + |BC|^2$  (Pisagor)

$5^2 = 3^2 + |BC|^2 \Rightarrow |BC| = 4$

$\Rightarrow \tan x = \frac{|AB|}{|BC|} = \frac{3}{4}$  bulunur.

Cevap: B

5.  $\frac{5\tan 10^\circ + 2\cot 80^\circ}{6\cot 80^\circ - 3\tan 10^\circ} - 3 \tan 43^\circ \cot 43^\circ$

$= \frac{5\tan 10^\circ + 2\cot 80^\circ}{6\cot 80^\circ - 3\tan 10^\circ} - 3$

$= \frac{5\cot 80^\circ + 2\cot 80^\circ}{6\cot 80^\circ - 3\cot 80^\circ} - 3$

$= \frac{7\cot 80^\circ}{3\cot 80^\circ} - 3$

$= \frac{7}{3} - 3 = \frac{-2}{3}$

Cevap: A

6.  $\frac{2\sin 83^\circ + \cos 7^\circ}{3\cos 7^\circ} = \frac{2\cos 7^\circ + \cos 7^\circ}{3\cos 7^\circ}$

$= \frac{3\cos 7^\circ}{3\cos 7^\circ} = 1$

Cevap: C

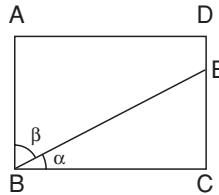
7.  $\sin \widehat{A} = \cos \widehat{A} \Rightarrow \widehat{A} + \widehat{A} = 90^\circ$

$2\widehat{A} = 90^\circ$

$\widehat{A} = 45^\circ$

Cevap: B

8. A



$\sin \alpha = \frac{3}{8}$  dir.

$\alpha + \beta = 90^\circ \Rightarrow \sin \alpha = \cos \beta$  dir.

$\frac{3}{8} = \cos \beta$

Cevap: C

9.  $\sin^2 x + \cos^2 x = 1$  dir.

$\sin^2 x = 1 - \cos^2 x$

$\sin x = \frac{12}{13} \Rightarrow \sin^2 x = \frac{144}{189}$

$\frac{144}{189} = \sin^2 x = 1 - \cos^2 x$

Cevap: B

OKS DERGİSİ

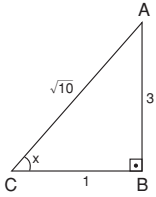
$$10. \frac{13\sin x + \cos x}{3\cos x} \neq \frac{2}{1}$$

$$6\cos x = 13\sin x + \cos x$$

$$\begin{aligned} 5\cos x &= 13\sin x \\ \frac{\sin x}{\cos x} &= \frac{5}{13} = \tan x \end{aligned}$$

$$11. \frac{\sin 45^\circ \cdot \cos 47^\circ \cdot \tan 20^\circ}{\cot 70^\circ \cdot \sin 43^\circ \cdot \cos 45^\circ} = 1 \text{ dir.}$$

12.



ABC dik üçgenini çizelim:

$s(\widehat{ACB}) = x$  olsun.

$$\tan x = \frac{|AB|}{|BC|} = 3$$

$|AB| = 3$ ,  $|BC| = 1$  olsun.

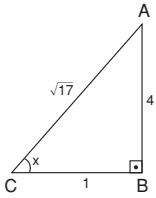
$|AC|^2 = 3^2 + 1^2$  (Pisagor)

$$|AC|^2 = 9 + 1 = 10 \Rightarrow |AC| = \sqrt{10}$$

$$\Rightarrow \frac{1}{\cos x} = \frac{|BC|}{|AC|} = \frac{1}{\sqrt{10}}$$

$$= \frac{\sqrt{10}}{1} = \sqrt{10}$$

13.



ABC dik üçgenini çizelim:

$s(\widehat{ACB}) = x$  olsun.

$$\cot x = \frac{|BC|}{|AB|} = \frac{1}{4}$$

$\Rightarrow |BC| = 1$ ,  $|AB| = 4$  olsun.

$$|AC|^2 = 4^2 + 1^2 = 17 \Rightarrow |AC| = \sqrt{17}$$

$$\sin x = \frac{|AB|}{|AC|} = \frac{4}{\sqrt{17}} \text{ olur.}$$

$$\sin x \cdot \cot x = \frac{4}{\sqrt{17}} \cdot \frac{1}{4} = \frac{1}{\sqrt{17}} = \frac{\sqrt{17}}{17}$$

Cevap: D

$$14. \frac{\sin 40^\circ \cdot \tan 11^\circ}{\cos 50^\circ \cdot \cot 79^\circ} = 1 \text{ dir.}$$

Cevap: A

Cevap: C

$$15. \frac{\sin 30^\circ - 1}{1 + \tan 45^\circ} = \frac{\frac{1}{2} - 1}{1 + 1}$$

Cevap: C

$$= \frac{\frac{1}{2} - 1}{2} = \frac{-1}{4}$$

Cevap: B

$$\begin{aligned} 16. \frac{\sin^4 x - \cos^4 x}{\sin x + \cos x} &= \frac{(\sin^2 x)^2 - (\cos^2 x)^2}{\sin x + \cos x} \\ &= \frac{(\sin^2 x - \cos^2 x)(\sin^2 x + \cos^2 x)}{\sin x + \cos x} \\ &= \frac{\sin^2 x - \cos^2 x}{\sin x + \cos x} \\ &= \frac{(\sin x - \cos x)(\sin x + \cos x)}{\sin x + \cos x} \\ &= \sin x - \cos x \end{aligned}$$

Cevap: D

Cevap: B

$$17. \sin x + \cos x = \frac{\sqrt{7}}{2} \text{ eşitliğin her iki tarafının karesi-}$$

ni alalım:

$$(\sin x + \cos x)^2 = \left(\frac{\sqrt{7}}{2}\right)^2$$

$$\sin^2 x + 2\sin x \cos x + \cos^2 x = \frac{7}{4}$$

$$1 + 2\sin x \cos x = \frac{7}{4}$$

$$2\sin x \cos x = \frac{7}{4} - 1 = \frac{3}{4}$$

$$\sin x \cos x = \frac{3}{8}$$

Cevap: A

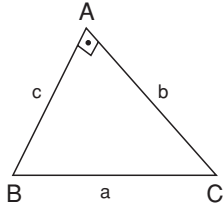
$$\begin{aligned}
 18. \frac{\sin 10^\circ \cdot \cos 60^\circ \cdot \tan 30^\circ \cdot \cos 50^\circ}{\sin 40^\circ \cdot \sin 45^\circ \cdot \cot 45^\circ \cdot \cos 80^\circ} &= \\
 &= \frac{\cos 60^\circ \cdot \tan 30^\circ}{\sin 45^\circ \cdot \cot 45^\circ} = \frac{\frac{1}{2} \cdot \frac{1}{\sqrt{3}}}{\frac{\sqrt{2}}{2} \cdot 1} \\
 &= \frac{2\sqrt{3}}{\sqrt{2}} = \frac{1}{\sqrt{2}} \cdot \frac{2}{\sqrt{3}} = \frac{1}{\sqrt{6}} \\
 &= \frac{\sqrt{6}}{6}
 \end{aligned}$$

Cevap: D

19. A)  $\sin^2 x + \cos^2 x = 1$ 'dir.  
 B)  $\tan x \cdot \cot x = 1$ 'dir.  
 C)  $\cos x = \sin(90 - x)$ 'tir.  
 C şıkkı yanlıştır.

Cevap: C

20.



$$\sin \hat{B} = \frac{|AC|}{|BC|} = \frac{b}{a}$$

$$\sin \hat{C} = \frac{|AB|}{|BC|} = \frac{c}{a}$$

$$\sin \hat{B} + \sin \hat{C} = \frac{b}{a} + \frac{c}{a}$$

$$= \frac{b+c}{a} \text{ dir.}$$

Cevap: C