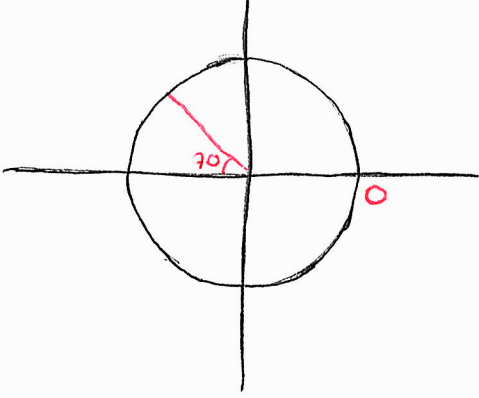
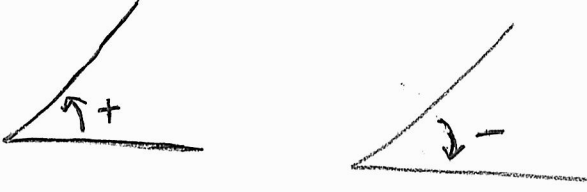
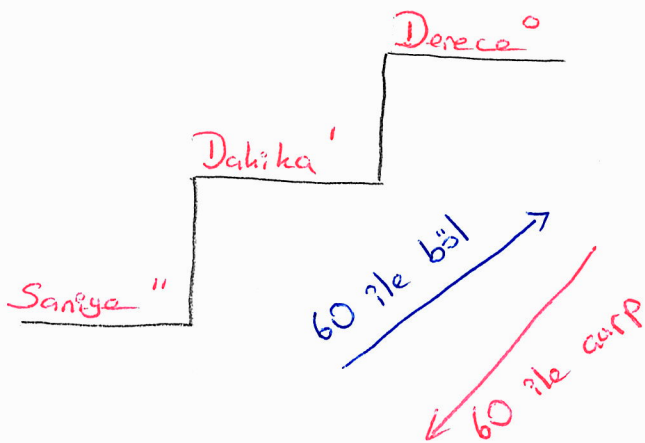


11. Sınıf 1. Dönem 1. Yazılı

## 1) Yönlü Açılar



1 derece<sup>°</sup> 60 dakika'  
1 derece' 60 saniye''



$\overset{\circ}{\underset{\circ}{O}}r = 6^{\circ} 20' 10''$  Açıyı saniye cinsinden ifade edin.

$\overset{\circ}{\underset{\circ}{O}}r = 23.000''$  Açıyı derece, dakika ve saniye olarak ifade edin.

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$\overset{\circ}{\underset{\circ}{O}}r = ABC$  üçgeninde  
 $m(A) = 47^{\circ} 12' 08''$   
 $m(B) = 63^{\circ} 10' 57''$   
1)  $m(C) = ?$

$$2) m(B) - m(A) = ?$$

Radyan  $\pi$  demek

$$360^\circ = 2\pi \text{ radyan}$$

→  $40^\circ$  kaç radyan

→  $3^\circ$  kaç radyan

$$3) \frac{m(A)}{2} = ?$$

→ 3 radyan kaç derece

$$4) \frac{s(B)}{3} = ?$$

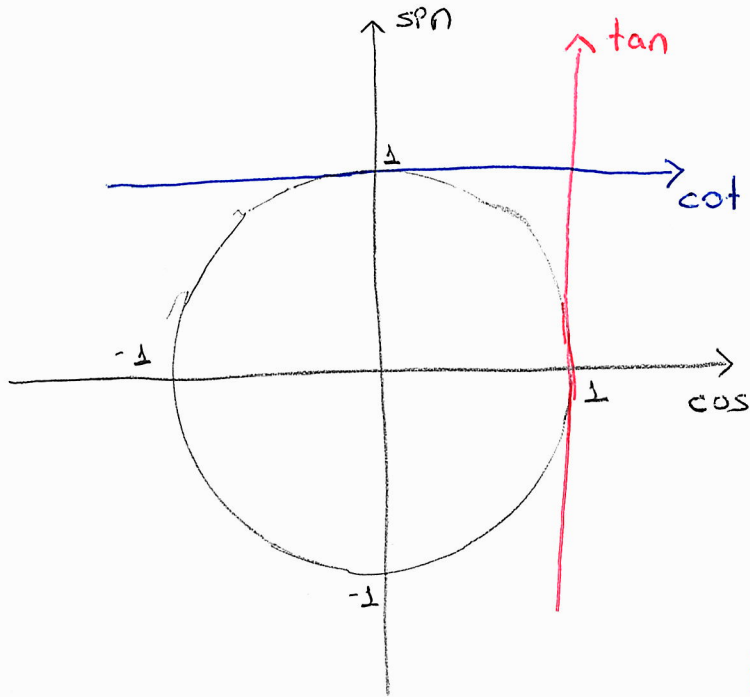
Esas Ölçü

→  $2000^\circ$  esas ölçüsü

→  $-2000^\circ$  esas ölçüsü

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# TRIGONOMETRI



$$\sin 0 =$$

$$\cos 0 =$$

$$\sin 90 =$$

$$\cos 90 =$$

$$\sin 180 =$$

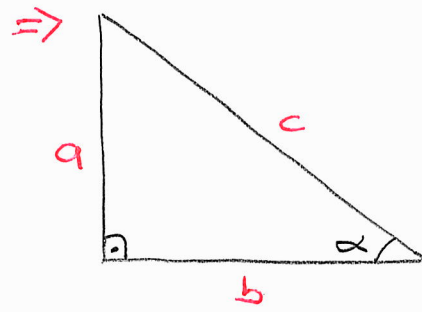
$$\cos 180 =$$

$$\sin 270 =$$

$$\cos 270 =$$

$$\sin 360 =$$

$$\cos 360 =$$



$$\sin \alpha = \frac{a}{c}$$

$$\cos \alpha = \frac{b}{c}$$

$$\tan \alpha = \frac{a}{b}$$

$$\cot \alpha = \frac{b}{a}$$

$$\Rightarrow \sin^2 \alpha + \cos^2 \alpha = 1$$

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

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

$$\Rightarrow \tan \alpha = \frac{\sin \alpha}{\cos \alpha}$$

$$\Rightarrow \cot \alpha = \frac{\cos \alpha}{\sin \alpha}$$

$$\Rightarrow \sec \alpha = \frac{1}{\cos \alpha}$$

$$\Rightarrow \csc \alpha = \frac{1}{\sin \alpha}$$

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30 - 45 - 60

→  $\sin 30 =$

$\sin 45 =$

$\sin 60 =$

→  $\tan 30 =$

$\tan 45 =$

$\tan 60 =$

→  $\cos 30 =$

$\cos 45 =$

$\cos 60 =$

→  $\cot 30 =$

$\cot 45 =$

$\cot 60 =$

→  $\sin 120 =$

→  $\cos 150 =$

→  $\tan 210 =$

→  $\cot 330 =$

→  $\sin \left( \frac{\pi}{2} + x \right) =$

→  $\cos \left( \frac{\pi}{2} - x \right) =$

→  $\tan \left( \frac{3\pi}{2} + x \right) =$

→  $\cot \left( \frac{3\pi}{2} - x \right) =$

→  $\sin (\pi - x) =$

→  $\cos (\pi + x) =$

→  $\tan (2\pi - x) =$

→  $\cot \left( \frac{63\pi}{2} - x \right) =$

→  $\cos \left( x - \frac{61\pi}{2} \right) =$

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$$\Rightarrow \text{Arcsin } x = y$$

$$\sin y = x$$

$$\bullet \text{Arcsin } \frac{1}{2} =$$

$$\bullet \text{Arctan } (+1) =$$

$$\Rightarrow \sin \text{ ve } \tan \{ \alpha, -\alpha \}$$

$$\bullet \text{Arccos } \frac{\sqrt{2}}{2} =$$

$$\bullet \text{Arccot } \left( -\frac{\sqrt{2}}{2} \right) =$$

$$\Rightarrow \cos \text{ ve } \cot (\alpha, 180-\alpha)$$

$$\overset{\circ}{\circ} \rightarrow \cos \left( \text{Arc tan } \frac{3}{4} \right) = ?$$

## Periyot

$$\rightarrow \sin^n(ax+b) \quad \left. \begin{array}{l} \\ \\ \\ \end{array} \right\} \begin{array}{l} n \text{ tek} \\ \\ \\ \end{array}$$

$$\rightarrow \cos^n(ax+b)$$

$$\rightarrow \sec^n(ax+b)$$

$$\rightarrow \csc^n(ax+b) \quad \left. \begin{array}{l} \\ \\ \\ \end{array} \right\} \begin{array}{l} n \text{ çift} \\ \\ \\ \end{array}$$

$$\rightarrow \tan(ax+b) \quad \left. \begin{array}{l} \\ \\ \end{array} \right\}$$

$$\rightarrow \cot(ax+b)$$

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## Siralamama

⇒ Herkes? dar açıya çevir.

⇒ sin ve tan çevir  
~~cos~~ ~~cot~~

⇒  $\sin 10 < \sin 50 < \sin 70$   
 $\tan 10 < \tan 50 < \tan 70$

⇒  $\sin 10 < \tan 10$

$\tan 45 = 1$   $\sin x \leq 1$

\*  $x > 45$  sınırlar kısıtlı  
tan için

$$a = \cos 330 =$$

$$b = \tan 240 =$$

$$c = \cot 120 =$$

$$d = \sin 110 =$$

## Peryod

$$f(x) = a \mp b \cdot \sin^n (mx+n)$$

$$f(x) = a \mp b \cdot \cos^n (mx+n)$$

$$f(x) = a \mp b \cdot \sec^n (mx+n)$$

$$f(x) = a \mp b \cdot \operatorname{cosec}^n (mx+n)$$

$n$  tek  $\rightarrow$  peryod  $\frac{2\pi}{|m|}$

$n$  çift  $\rightarrow$  peryod  $\frac{\pi}{|m|}$

$$\rightarrow f(x) = a \mp b \cdot \tan^n (mx+n)$$

$$\rightarrow f(x) = a \mp b \cdot \cot^n (mx+n)$$

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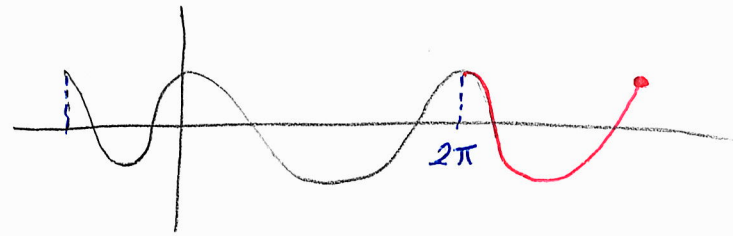


$$y = \sin x$$



Period =

$$y = \cos x$$



Period =

$\infty$   
 $\rightarrow y = 3 \sin 2x + 2$  grafigini  
 ariqliniz?

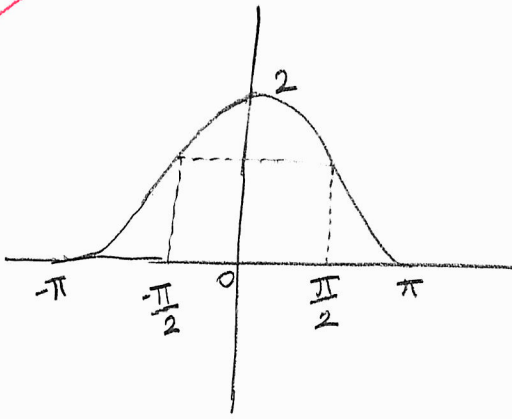
$\infty$   
 $\rightarrow y = \frac{2 + \cos x}{3}$  grafigini  
 ariqliniz?

/matematikinguleryuzu





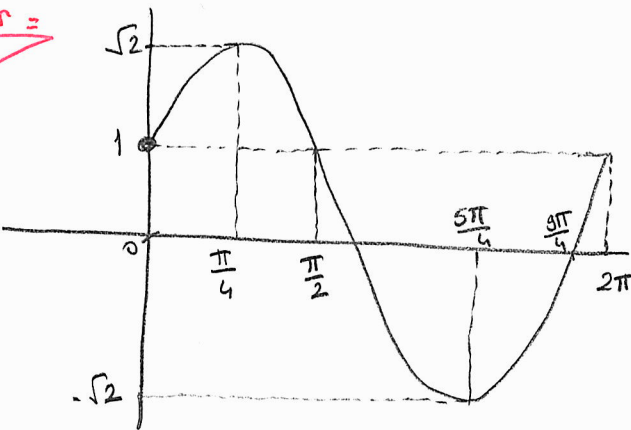
Ör:



Gratik kime ait ?

- A)  $y = \sin x + 2$
- B)  $y = \cos x - 1$
- C)  $y = \cos x + 2$
- D)  $y = 2 \cdot \cos x + 2$
- E)  $y = \cos x + 1$

Ör:



- A)  $y = \sin x - \cos x$
- B)  $y = \sin x \cdot \cos x$
- C)  $y = \cos x - \sin x$
- D)  $y = \sin x + \cos x$
- E)  $y = \frac{\sin x}{\cos x}$

Ör:

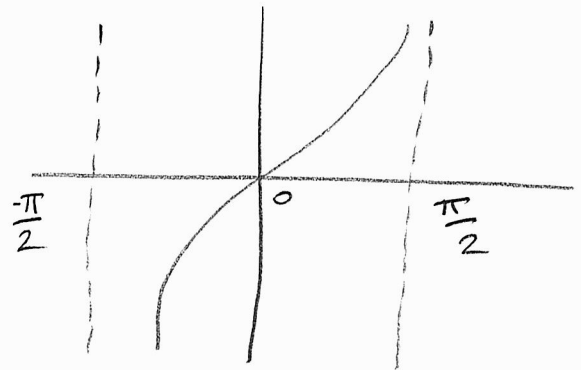
$$f(x) = 2 \sin(ax + 4)$$

periyodu  $\frac{2\pi}{3}$  ise

$$g(x) = \cos^2\left(\frac{4ax+5}{2}\right)$$

periyodu kaçtır?

$$y = \tan x$$

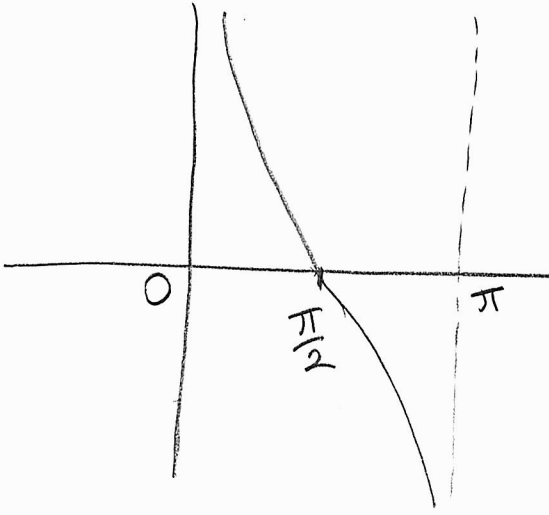


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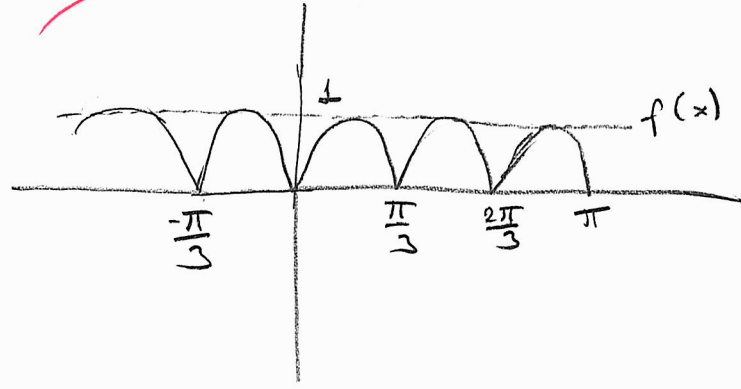




$$y = \cot x$$



$\infty$   
 $\rightarrow$



1) Periyodu  $\frac{2\pi}{3}$  tür.

2)  $f(x)$  çift fonksiyon.

3)  $[0, \pi]$  aralığında  $f(x) = \frac{1}{2}$

denk, çözüm kümesi 6 ele-  
manlı.

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$\infty$   
 $\rightarrow$   $f(x)$  periyodu 4 tür.

$$f(-3) = 4$$

$$f(2) = -1$$

olduğuna göre ;

$$f(9) - 3 f(-6) = ?$$

$\infty$   
 $\rightarrow$   $\cos^4 x + \sin^2 x \cdot \cos^2 x - \cos^2 x = ?$

$$\text{Ör: } A = 3 \sin x - 4 \cos x$$

en büyük ve en küçük değeri?

$$\text{Ör: } \frac{1 - \sin x}{\tan x} : \frac{\cot x}{1 + \sin x} = ?$$

$$\text{Ör: } \frac{\cos x - \frac{1}{\sin x}}{\sin x - \frac{1}{\cos x}} = ?$$

$$\text{Ör: } \frac{1 - \cos x}{\sin x} + \frac{\sin x}{1 - \cos x} = ?$$

/matematiginguleryuzu

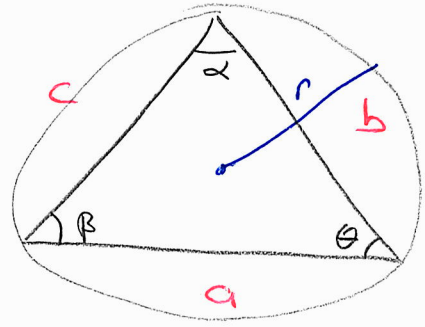
$$\text{Ör: } \frac{1}{\cos^2 x} = \frac{1}{\cot^2 x} = ?$$

$$\text{Ör: } \frac{\sec x + \operatorname{cosec} x}{\tan x + \cot x} = ?$$



$\text{Ör 2} \quad \sin(\pi - x) - \cos\left(\frac{\pi}{2} + x\right) - \tan\left(\frac{\pi}{2} - x\right)$   
 Sonuç = ?

## Sin Teoremi



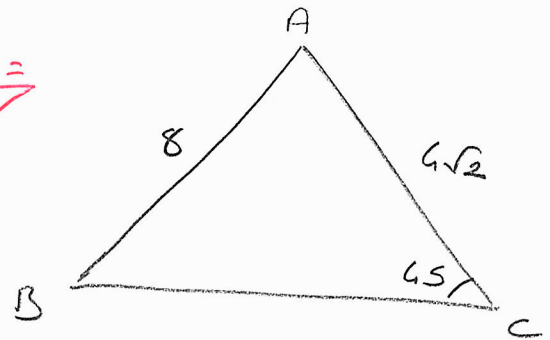
$$\frac{a}{\sin \alpha} = \frac{b}{\sin \beta} = \frac{c}{\sin \gamma} = 2r$$

$\text{Ör} = \sin 25 = \frac{3}{5}$

$$\frac{\sin 65 + \tan 205}{\cos 335} = ?$$

/matematiginguleryuzu

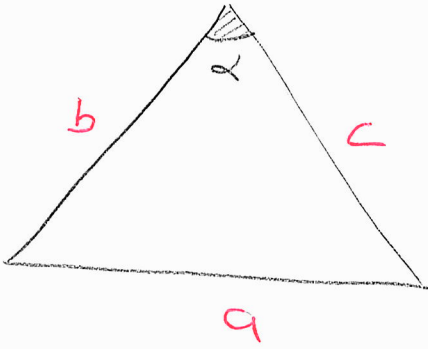
$\text{Ör} =$



$$m(A) = ?$$

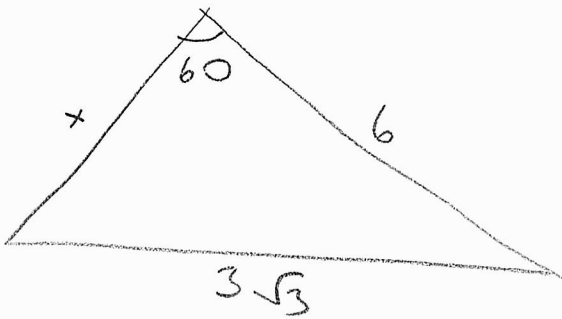
$\text{Ör 2} \quad \frac{2 \cos\left(\frac{3\pi}{2} - x\right)}{3 \sin(2\pi + x)} = ?$

## Cos Teorem?



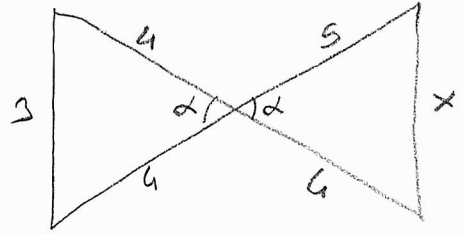
$$a^2 = b^2 + c^2 - 2b \cdot c \cos \alpha$$

00  
0r=



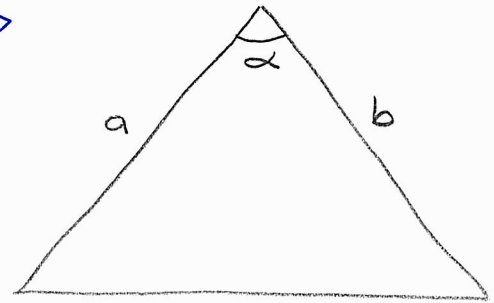
$$x = ?$$

00  
0r=



$$x = ?$$

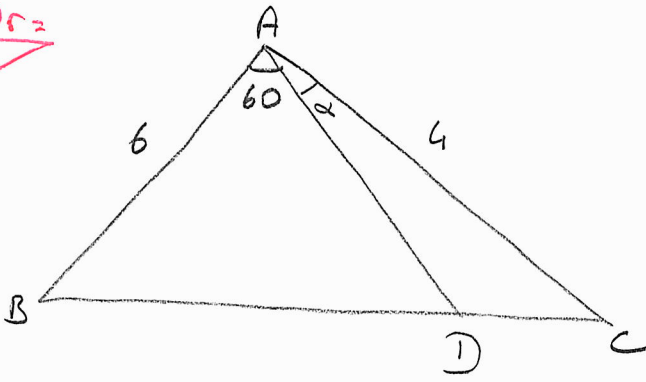
/matematiginguleryuzu



$$\text{Alan} = \frac{a \cdot b \cdot \sin \alpha}{2}$$



Ör=



$$|BD| = 4|DC| \quad \sin \alpha = ?$$

Ör= ABC üçgeninde

$$a^2 + c^2 - b^2 = 10 \cdot \cot(\hat{B})$$
$$\sin(\hat{B}) = ?$$

/matematiginguleryuzu

