

APOTEMI TRIGONOMETRİ

MARATON TESTLERİ

TEST 1

$$1) -\sin x = -\cos x + \frac{1}{2} \quad \left| \begin{array}{l} c^2 - 2sc + s^2 = \frac{1}{4} \\ -2sc = -\frac{3}{4} \\ sc = \frac{3}{8} \end{array} \right.$$

$$2) 1 - \frac{c}{s} - \frac{s^2}{c} = 3c^2$$

$$\frac{-c}{s} = 2c^2$$

$$\frac{-1}{s} = 2c$$

$$\sin 2x = -1$$

$$3) \begin{array}{l} 1594 \overline{) 360} \\ \underline{1440} \\ 1540 \end{array}$$

$$a = \sin 157 \cdot \sin 158$$

$$= \sin 21 \cdot \sin 22$$

$$b = \sin 156 \cdot \sin 154$$

$$= \sin 24 \cdot \sin 26$$

$$c = \cos 159 \cdot \sin 157$$

$$= -\cos 21 \cdot \sin 22$$

$$4) \tan x = \frac{1}{4} \quad (x \in 3. \text{ bölge})$$

$$2s_x \cdot c_x \cdot s_x = \frac{-72}{125}$$

$$\downarrow \quad \downarrow \quad \downarrow$$

$$-\frac{3}{5} \quad -\frac{4}{5} \quad -\frac{3}{5}$$

$$5) \text{Maximin periyodu } \frac{1}{2} \text{ dir. } D \parallel$$

$$a \cdot \sin^2(bx+c) \Rightarrow a \text{ tek ise } \frac{2\pi}{|b|}$$

$$6) \begin{array}{l} 2\alpha + \beta = 180^\circ \\ \cos 2\alpha = \frac{a}{3a} = \frac{1}{3} \end{array}$$

$$7) \tan(\alpha+\beta) = \frac{t_\alpha + t_\beta}{1 - t_\alpha \cdot t_\beta}$$

$$= \frac{\frac{2}{3} + 2}{1 - \frac{4}{3}} = \frac{8}{-1} = -8$$

$$8) \frac{2c}{1+\frac{s}{c}} = \frac{2c}{\frac{s+c}{c}} = \frac{2c^2}{s+c}$$

$$\frac{2c^2-1}{s+c} = a \rightarrow \cos 2x = c^2 - s^2$$

$$= (c-s)(c+s)$$

$$c-s=a$$

$$c^2+s^2-2sc=a^2$$

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

$$9) s^4 = 1 - 2s^2 \quad s^2 = t \text{ olsun}$$

$$t^2 + 2t - 1 = 0$$

$$t^2 + 2t + 1 - 1 - 1 = 0$$

$$(t+1)^2 = 2$$

$$t+1 = \sqrt{2} \Rightarrow t = \sqrt{2}-1$$

$$t+1 = -\sqrt{2} \Rightarrow t = -1-\sqrt{2}$$

$$\sin^2 x = \sqrt{2}-1$$

$$10) \begin{array}{l} S^2 = c \cdot a \cdot (s+c) \\ a = \frac{s^2}{c \cdot (s+c)} \\ |EC| = \frac{s^2}{s+c} \end{array}$$

$$11) \frac{cc - ss}{cc + ss} = \frac{1}{3} \Rightarrow 3cc - 3ss = cc + ss$$

$$2cc = 4ss$$

$$c \cdot c = 2s \cdot s$$

$$\frac{1}{2} = t_\alpha \cdot t_\beta$$

$$12) \begin{array}{l} \arcsin \frac{2}{\sqrt{5}} = a \text{ olsun} \\ \cos a = \frac{1}{\sqrt{5}} \\ \sin a = \frac{2}{\sqrt{5}} \end{array}$$

$$13) 2c^2 - c = c^2$$

$$c^2 - c = 0$$

$$c(c-1) = 0$$

$$\cos x \neq 0 \quad \cos x = 1 \rightarrow 0, 2\pi$$

$$\begin{aligned}
 14) \quad f(x) &= 2 \cdot (\sin x)^2 \\
 &= 2 \cdot \left(\frac{\sin 2x}{2} \right)^2 \\
 &= \frac{1}{4} \cdot \sin^2 2x \quad \frac{2\pi}{121} = \pi
 \end{aligned}$$

$$\begin{aligned}
 15) \quad &0 \text{ rad } 1 \\
 &\pi \text{ rad } 1 \\
 &\cos \pi = -1
 \end{aligned}$$

$$\begin{aligned}
 16) \quad &\text{Diagram showing two circles of radius } r \text{ touching at point } O. \\
 &\text{Points } A \text{ and } B \text{ are on the circles, with } OA = OB = r. \\
 &\text{Angles } \angle AOB = 20^\circ, \angle OAB = \angle OBA = 10^\circ. \\
 &\text{Lengths } OA = OB = r, AB = 2. \\
 &\sin 10^\circ = \frac{r}{r+2} \\
 &r \cdot \sin 10^\circ + 2 \cdot \sin 10^\circ = r \\
 &> 2 \cdot \sin 10^\circ = r - r \sin 10^\circ \\
 &\frac{2 \sin 10^\circ}{1 - \sin 10^\circ} = r
 \end{aligned}$$

$$\begin{aligned}
 17) \quad &1 + \sin x > 0 \quad \cos x < 0 \\
 &\Downarrow \\
 &2. \text{ u. } 3. \text{ b\"og} \\
 &E
 \end{aligned}$$