1. Soruda, I. Gruptaki kümelerin şekilleri birer rakamla gösterilerek II. Gruptaki sayılar elde edilmiştir. Soru işaretiyle belirtilen kümenin hangi sayıyla gösterildiğini bulunuz.

In Question 1, by coding each figure with a specific numeral in group I, the numbers in group II are obtained. According to this, find the correct number that corresponds to the figures indicated by question mark.

1.

I	II
⊕ ⇳ • ⊗	6189
• ◊ ⇳ *	2897
⊕ ⊗ ◊ ⇳	2575
⇳ • ⊗ ⊕	6921
• Θ * Θ	9216

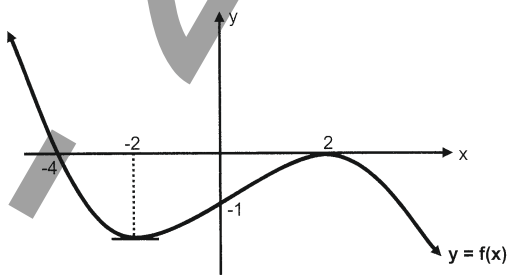
⇳ Θ ⊗ ⊕ = ?

A) 7692 **B)** 8152 **C)** 9527 **D)** 9527 **E)** 9516

2. $\dfrac{4^{-2}-9^{-2}}{(6^{-2})^2}=?$

A) 24 **B)** 36 **C)** 54 **D)** 65 **E)** 70

3.



$f'(x)$ notasyonu $f(x)$ fonksiyonunun türevini göstersin. Yukarıdaki grafikte verilenlere göre, $f'(x)>0$ eşitsizliğini sağlayan kaç farklı x tamsayı değeri vardır?

Let $f'(x)$ be the derivation of $f(x)$. In accordance with the above graph, how many different integers satisfy the inequality $f'(x)>0$?

A) 1 **B)** 3 **C)** 4 **D)** 5 **E)** 6

4. $\sqrt{9-6\sqrt{2}} = ?$

A) $6-\sqrt{2}$ **B)** $3-\sqrt{3}$ **C)** $\sqrt{6}-\sqrt{2}$

D) $\sqrt{3}\left(\sqrt{2}-1\right)$ **E)** $3\left(\sqrt{2}-1\right)$

5. SERA=?

A) 2361 **B)** 6532 **C)** 1345

D) 4162 **E)** 3521

6. 5241=?

A) ERAS **B)** RAMI **C)** VARI

D) ASIM **E)** MASE

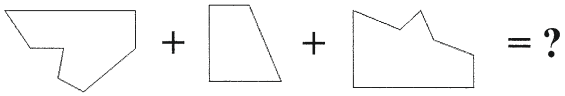
Aşağıdaki I. ve II. Grupta verilenlere göre, 5. Soruda soru işaretiyle belirtilen sözcüğün hangi sayıyla gösterildiğini, 6. Soruda ise soru işaretiyle belirtilen sayının hangi sözcükle gösterildiğini bulunuz.

In accordance with the material given in the following Groups I and II, find the correct number corresponds to the word in Question 5, and find the correct word corresponds to the number in Question 6.

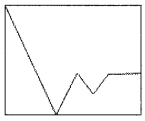
I	II
VASE	
SRIM	5162 3241 7325
IVAM	4675 1642
MERA	
ERSA	

7. Verilen parçalar kullanılarak oluşturulan şekli bulunuz.

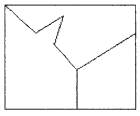
Find the real figure need to replaced instead of the question mark?



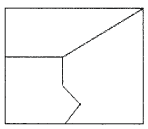
A)



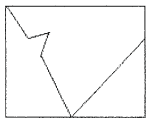
B)



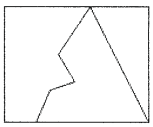
C)



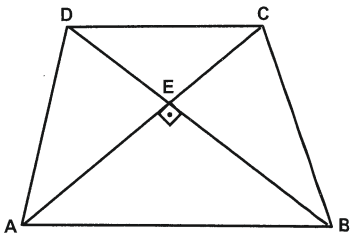
D)



E)



8.



ABCD yamuk (trapezoid), $[AB]//[DC]$, $[AC]\perp[DB]$, $|AC|=5\,\text{cm}$, $|BD|=10\,\text{cm}$. **What is** $|DC|+|AB|=?$

A) $5\sqrt{5}$ **B)** 10 **C)** $2\sqrt{30}$

D) $2\sqrt{34}$ **E)** 15

9.

$$\left.\begin{array}{l}\pi < x < 2\pi \\ \cos x = \dfrac{3}{5}\end{array}\right\} \Rightarrow \tan x - \sin x = ?$$

A) -3 **B)** $-\dfrac{8}{15}$ **C)** $\dfrac{2}{13}$

D) $\dfrac{2}{5}$ **E)** 3

10. $2\sin 2x - 1 = 0$ **denkleminin bir kökü aşağıdakilerden hangisidir?**

Which one of the following is the root of $2\sin 2x - 1 = 0$**?**

A) $\dfrac{\pi}{6}$ **B)** $\dfrac{2\pi}{3}$ **C)** $\dfrac{3\pi}{5}$

D) $\dfrac{5\pi}{12}$ **E)** $\dfrac{7\pi}{15}$

11.-12. sorularda, I. gruptaki sözcüklerin harfleri birer rakamla gösterilerek II. gruptaki sayılar elde edilmiştir. Soru işaretiyle belirtilen sözcüğün hangi sayıyla gösterildiğini bulunuz.

In Questions 11-12, each letters has been coded with a specific numeral for the words in group I and so the numbers in group II are obtained. According to this, find the correct number which corresponds to the word indicated by question mark.

11.

I	II
MAVİ	2375 7513 1525
RİKA	
KARA	
KİVİ	1373 8325
VARİ	

KİRA = ?

A) 1523 **B)** 5372 **C)** 2571 **D)** 7312 **E)** 1573

12.

I	II
RIZA	7152 5372 8173
ZEKA	
KIRE	
ZERA	5382 8192
KITA	

KEZA = ?

A) 7258 **B)** 1387 **C)** 8352 **D)** 5723 **E)** 8172

13. $\sum_{k=2}^{\infty}\left(\frac{1}{2k^2-2}\right)=?$

A) $\frac{1}{4}$ **B)** $\frac{1}{2}$ **C)** $\frac{3}{2}$ **D)** $\frac{3}{8}$ **E)** $\frac{3}{5}$

14. $\int_0^2 \frac{2x}{x+2}dx = ?$

A) $2-2\ln 2$ **B)** $2\ln 2$ **C)** $2+\ln 2$

D) $4-4\ln 2$ **E)** $2-\ln 2$

15. $x^2-1=5x \Rightarrow x^2+\frac{1}{x^2}=?$

A) 27 **B)** 25 **C)** 23

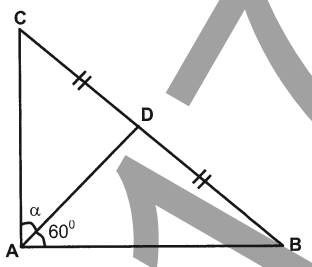
D) 21 **E)** 20

16. $f(x)=xe^x \Rightarrow f'(1)=?$

A) e **B)** 2e **C)** 3e

D) 4e **E)** 6e

17.



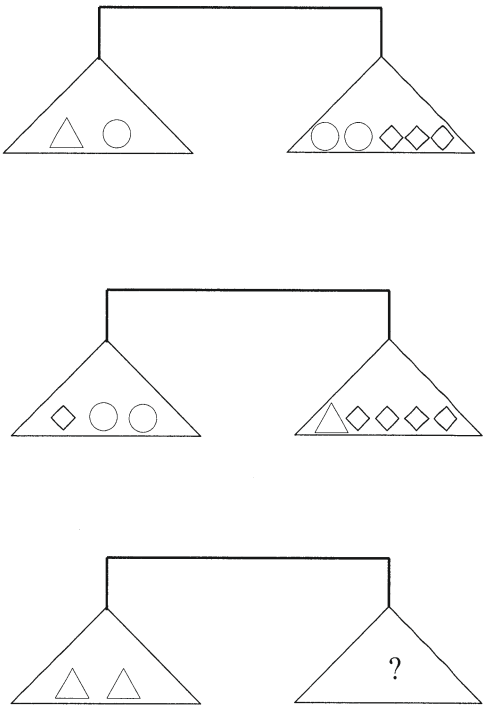
Yukarıda verilen ABC üçgeninde $|BD|=|DC|$, $|AB|=3$, $|AC|=2\sqrt{3}$ **ve** $m(\widehat{DAB})=60^0$, $m(\widehat{DAC})=\alpha$ **olduğuna göre** $\sin\alpha=?$

For the triangle ABC, if we have $|BD|=|DC|$, $|AB|=3$, $|AC|=2\sqrt{3}$ **and** $m(\widehat{DAB})=60^0$, $m(\widehat{DAC})=\alpha$, **then what is** $\sin\alpha=?$

A) $\frac{3}{4}$ **B)** $\frac{3}{5}$ **C)** $\frac{\sqrt{5}}{3}$

D) $\frac{3\sqrt{5}}{5}$ **E)** $\frac{4}{5}$

18.



Yukarıdaki terazilerin üçü de dengede olduğuna göre III. terazideki soru işareti aşağıdakilerden hangisini göstermektedir?

In the above figure, let all three scales be in balance. As a result of this, find out the question mark in scale III ?

A) ○ ○ ○

B) ○ ◇ ◇

C) ◇ ○ ○

D) △ ◇ ○

E) ○ ○

19. $t \in \mathbb{R}$ **ve** $0 < t < 1$ **olmak üzere,** $x = 3t^2 - 4t$ **ve** $y = t^3 - t$ **olduğuna göre,** $y = f(x)$ **fonksiyonunun** $x = -1$ **deki türevi kaçtır?**

For $t \in \mathbb{R}$ **and** $0 < t < 1$, **if** $x = 3t^2 - 4t$ **and** $y = t^3 - t$, **then what is the derivation of** $y = f(x)$ **at** $x = -1$?

A) $-\frac{4}{3}$ **B)** $-\frac{1}{3}$ **C)** 1

D) $\frac{1}{3}$ **E)** $\frac{2}{3}$

20. $\lim_{x \to 2} \frac{x-2}{x^2-4} = ?$

A) -1 **B)** $\frac{-1}{4}$ **C)** 0

D) 1 **E)** $\frac{1}{4}$

21. $\frac{0,12}{0,03}+\frac{0,09}{0,03}-\frac{0,3}{0,03}=?$

A) -1 **B)** $\frac{1}{5}$ **C)** $\frac{21}{5}$

D) $\frac{-12}{25}$ **E)** -3

22. **I.** $x\Delta y=\begin{cases} y-x, & |x|>|y| \\ x-y, & |x|=|y| \\ 2(x+y), & |x|<|y| \end{cases}$

II. $(1\Delta(-1))\Delta(3\Delta 0)=?$

I. Eşitlikte Δ işleminin görevi belirlenmiştir. Buna göre II. Eşitlikte soru işaretinin yerine aşağıdakilerden hangisi gelmelidir?

The operation Δ is established in Equation I. According to this operation, determine which of the following number does stand for the question mark in Equation II?

A) -2 **B)** -1 **C)** 0

D) 1 **E)** 2

23. $\int \frac{2}{x^2+2x}dx=?$

A) $\ln\left|\frac{x}{2x+1}\right|+c$ **B)** $\ln\left|\frac{x}{x+2}\right|+c$

C) $\ln|x+2|+c$ **D)** $x-\ln|x+1|+c$

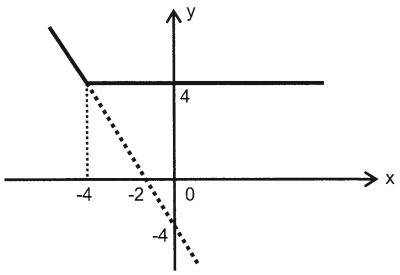
E) $2x+\ln\left|\frac{x}{x+2}\right|+c$

24. $\frac{0,12}{0,4}+\frac{0,08}{0,02}-\frac{0,03}{0,3}=?$

A) -1 **B)** $\frac{1}{5}$ **C)** $\frac{21}{5}$

D) $\frac{-12}{25}$ **E)** 3

25.



Şekilde verilen grafik aşağıdakilerden hangisine aittir?

Which one in the following is represented by the above graph?

A) $y=\left|x-\left|x-4\right|\right|$

B) $y=\left|x+\left|x-4\right|\right|$

C) $y=\left|4-\left|4x+4\right|\right|$

D) $y=\left|x\right|+\left|x+4\right|$

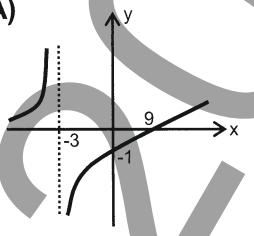
E) $y=\left|x-\left|x+4\right|\right|$

26. $y=\dfrac{x-9}{(x+3)^2}$

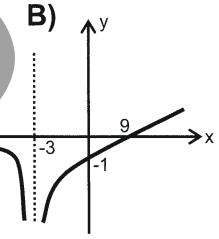
fonksiyonunun grafiği aşağıdakilerden hangisidir?

Which one is the graph of the function $y=\dfrac{x-9}{(x+3)^2}$ **=?**

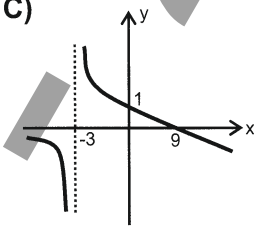
A)



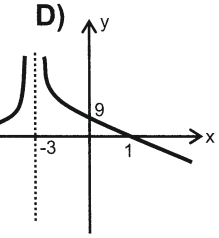
B)



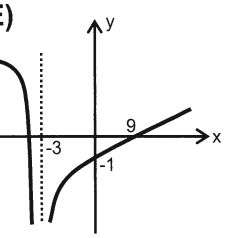
C)



D)



E)



27. $\log_8 32 + \log_2 32 = ?$

A) $\frac{20}{3}$ **B)** $\frac{29}{5}$ **C)** $\frac{2}{5}$ **D)** $\frac{6}{7}$ **E)** $\frac{5}{2}$

28. $\frac{\sin x + \sin 9x}{\cos^2 2x - \sin^2 2x} = ?$

A) sin5x **B)** cos5x **C)** tan2x **D)** 2cos5x **E)** 2sin5x

29. $\lim_{x \to 4} \frac{x^2 + 4x - 32}{x^3 - 4x} = ?$

A) 0 **B)** 3 **C)** 4 **D)** 5 **E)** -3

30. $\lim_{x \to -1} \frac{3^x - \frac{1}{3}}{\ln(x+2)} = ?$

A) -1 **B)** 0 **C)** ln3 **D)** $-\ln \sqrt[3]{3}$ **E)** $\ln \sqrt[3]{3}$

31. $\dfrac{\sqrt{0,16}-0,16}{\sqrt{0,04}-0,04}=?$

A) $\dfrac{1}{2}$ **B)** $\dfrac{2}{3}$ **C)** $\dfrac{3}{2}$ **D)** 2 **E)** 4

32. $A=\{3,4,\{5\},\{6,7\},\varnothing\}$ **kümesi veriliyor. Buna göre aşağıdakilerden hangisi yanlıştır?**

Which one is incorrect for the set $A=\{3,4,\{5\},\{6,7\},\varnothing\}$ **?**

A) $3\in A$ **B)** $\{4\}\subset A$
C) $\{\{6,7\}\}\subset A$ **D)** $\{\varnothing\}\subset A$
E) $\{5\}\notin A$

33. $\int \dfrac{\sin x}{1-\cos x}\,d(\cos x)=?$

A) $\sin x-x+c$
B) $-x-\sin x+c$
C) $x+\sin x+c$
D) $x-\cos x+c$
E) $\sin x-\cos x+c$

34. $\int \dfrac{dx}{x\ln x}=?$

A) $\ln(\ln x)+c$ **B)** $\ln(x)+c$ **C)** e^x+c
D) 1 **E)** 0

35.

x	a	b
a	2a+15	
b		ab+6

Yukarıdaki çarpma tablosunda a ve b harfleri pozitif birer sayının yerine kullanılmıştır. Buna göre b kaçtır?

In the above multiplication table, each of the letters a and b is used for a positive number. Accordingly to this, determine what is the value of b?

A) 3 **B)** 4 **C)** 5 **D)** 6 **E)** 7

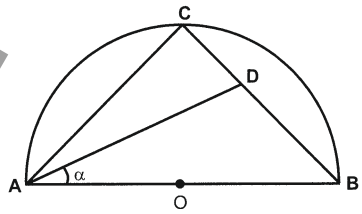
36. $\left.\begin{matrix} x+2y=7 \\ 2x-2y=5 \end{matrix}\right\} \Rightarrow x.y=?$

A) 1 **B)** 2 **C)** 3 **D)** 5 **E)** 6

37. $\left(1-\frac{a}{a+b}\right):\left(1-\frac{b}{a+b}\right)=?$

A) $\frac{a+b}{b}$ **B)** $\frac{a+b}{a}$ **C)** $\frac{a}{b}$ **D) 1** **E)** $\frac{b}{a}$

38.



O merkezli yarım çemberde, $3\cdot|AC|=4\cdot|BC|$, $|BD|=2\cdot|CD|$, $m(B\widehat{A}D)=\alpha$ **olduğuna göre,** $\cot\alpha$ **kaçtır?**

For the above O based semicircle, if $3\cdot|AC|=4\cdot|BC|$, $|BD|=2\cdot|CD|$ **and** $m(B\widehat{A}D)=\alpha$, **then what is** $\cot\alpha$ **?**

A) $\frac{5}{2}$ **B)** $\frac{19}{8}$ **C)** $\frac{19}{11}$ **D)** $\frac{9}{5}$ **E)** $\frac{9}{2}$

39. $i^2 = -1 \Rightarrow \dfrac{1}{i-1} + \dfrac{1}{i+1} = ?$

A) $-i$ **B)** $\sqrt{2}$ **C)** $-\sqrt{2}$

D) 2 **E)** 1

40. $\lim\limits_{x \to 2} \dfrac{\sin(x^2-4)(2x-4)}{\tan(x-2)(x+2)} = ?$

A) -1 **B)** 1 **C)** -2

D) 2 **E)** 0

41. $f(x) = \cos 8x \Rightarrow f''(x) = ?$

A) $8^3 . \sin 8x$

B) $8^2 . \cos 8x$

C) $-8^2 . \cos 8x$

D) $-8^2 . \sin 8x$

E) $-8^4 . \cos 8x$

42. $3^{3a-11} = 81 \Rightarrow 3^a = ?$

A) 243 **B)** 81 **C)** 27

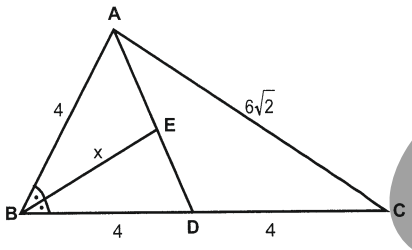
D) 3 **E)** 9

43. $f(x^2+x+1)=2x-5 \Rightarrow \left(f^{-1}\right)'(1)=?$

A) $\frac{2}{7}$ **B)** $\frac{7}{2}$ **C)** 0

D) 2 **E)** $\frac{1}{2}$

44.



ABC üçgeni için, $[BE]$ **açıortay,** $|AB|=|BD|=|DC|=4\,\text{cm}$ **ve** $|AC|=6\sqrt{2}\,\text{cm}$ **olduğuna göre** $|BE|=x=?$

For the triangle ABC, let $[BE]$ **be an intersecting line, and let** $|AB|=|BD|=|DC|=4\,\text{cm}$ **and** $|AC|=6\sqrt{2}\,\text{cm}$. **What is** $|BE|=x=?$

A) $\sqrt{15}$ **B)** $2\sqrt{3}$ **C)** $\sqrt{10}$

D) 3 **E)** $2\sqrt{2}$

45. $x^8-4x^4+3=0 \Rightarrow x^8+\frac{16}{x^8}=?$

A) 10 **B)** 3 **C)** 6 **D)** 2 **E)** 17

46. $a,b,c \in \mathbb{Z}$ **tamsayıları için,** $a^3b^2<0$, $b^3c^3>0$ **ve** $c^5a^4<0$ **sağlansın. Buna göre** a,b,c **'nin işaretleri sırasıyla hangisidir?**

Let $a,b,c \in \mathbb{Z}$ **be integers, and let** $a^3b^2<0$, $b^3c^3>0$ **and** $c^5a^4<0$ **be hold. Then what are the signs of** a,b **and** c, **respectively.**

A) $-,-,-$ **B)** $-,-,+$

C) $+,+,+$ **D)** $+,+,-$

E) $+,-,-$

47. $\dfrac{9!+8!}{7!}=?$

A) 17 **B)** 72 **C)** 80

D) 90 **E)** 100

48. $\dfrac{d}{dx}\left(\int_{2}^{6}\left(\dfrac{x+1}{x^2-x+1}\right)dx\right)=?$

A) 1 **B)** $\dfrac{9}{2}$ **C)** -1

D) 0 **E)** -2

49. $\begin{cases} x+2y+3z=3 \\ 3x+2y+z=13 \\ x-y-z=6 \end{cases} \Rightarrow x=?$

A) 0 **B)** 1 **C)** 4

D) 5 **E)** 10

50. $x^2-(m+3)x+m-1=0$ **denkleminin köklerinin kareleri toplamının minimum olması için m değeri ne olmalıdır?**

To be minumum of the sum of the squares of roots of the equation $x^2-(m+3)x+m-1=0$, what should the value of m be?

A) -2 **B)** -1 **C)** 2

D) 3 **E)** 6

51., 52. ve 53. sorular aşağıda verilen bilgiler yardımıyla cevaplanacaktır.

- Mehmetin harçlığı İrem'inkinden 6 TL fazladır.
- Bekir, Veli'den 3 TL fazla, Ahmet' ten ise 2 TL az harçlık almaktadır.
- İrem ile Mehmet'in toplam harçlığı, Ahmet ile Velinin toplamından 9 TL fazladır.
- Ahmet ile Mehmet'in harçlıkları toplamı 25 TL dir.

Questions 51, 52 and 53 will be answered by using the following information.

- Mehmet's allowance is more than 6 TL from Irem.
- Bekir's allowance is more than 3 TL from Veli but less than 2 TL from Ahmet.
- The sum of the allowances of Irem and Mehmet is more than 9 TL from the sum of the allowances of Ahmet and Veli.
- The sum of the allowances of Ahmet and Mehmet is 25 TL .

51. Veli'nin harçlığı kaç TL dir?

What is the allowance of Veli?

A) 5 B) 10 C) 12

D) 14 E) 20

52. Ahmet ile İrem'in harçlıkları toplamı kaç TL dir?

What is the sum of the allowances of Ahmet and Irem?

A) 10 B) 14 C) 19

D) 20 E) 24

53. Mehmet ile Bekir'in harçlıkları farkı kaç TL dir?

What is difference between the allowances of Mehmet and Bekir?

A) 1 B) 2 C) 3

D) 5 E) 7

54. $\frac{1}{4}+\left[\frac{1}{2}:(\frac{5}{6}-\frac{2}{3})\right]=?$

A) $\frac{5}{2}$ **B)** $\frac{7}{4}$ **C)** $\frac{13}{4}$ **D)** $\frac{15}{4}$ **E)** 5

55. $\int_0^{\pi} 4\sin x.\cos x\,dx=?$

A) 0 **B)** 1 **C)** -1 **D)** 2 **E)** -2

56. $\lim_{x\to 0}\frac{\sin 3x}{\tan 3x}=?$

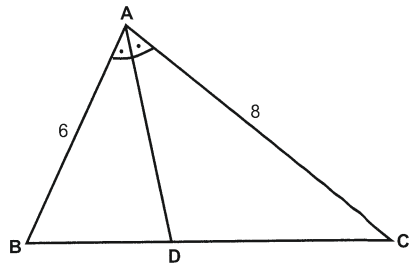
A) $\frac{2}{3}$ **B)** 2 **C)** $\frac{1}{3}$ **D)** 1 **E)** $\frac{2}{27}$

57. $A=\begin{bmatrix}-1 & -1\\ 0 & 3\end{bmatrix}$, $B=\begin{bmatrix}2 & 0\\ 1 & 3\end{bmatrix}$ **matrisleri veriliyor. Buna göre** det(A.B)=?

What is the determinat of the product of matrices A **and** B**?**

A) 4 **B)** 10 **C)** -18 **D)** -3 **E)** 7

58.



$|AB| = 6\,cm$, $|AC| = 8\,cm$ **olduğuna göre,** $|DC|$ **nin alabileceği en küçük tamsayı değeri kaçtır?**

What is the minumum integer value for the length of $|DC|$ **?**

A) 2 **B)** 3 **C)** 4 **D)** 5 **E)** 6

59. $A = \begin{bmatrix} 1 & 4 & -1 \\ 2 & 3 & -2 \\ 0 & 3 & x-2 \end{bmatrix}$

matrisinin ters matrisinin olmaması için x kaç olmalıdır?

To not having the inverse matrix of A, **what should** x **be ?**

A) 2 **B)** 3 **C)** 4 **D)** 5 **E)** 6

60. $\int \frac{dx}{x^2+4} = ?$

A) $\frac{1}{6}\arctan(\frac{2x}{3})+c$

B) $\arctan(\frac{x}{2})+c$

C) $\frac{1}{2}\arctan(\frac{x}{2})+c$

D) $\frac{1}{6}\operatorname{arccot}(\frac{x}{3})+c$

E) $\frac{1}{9}\arcsin(\frac{3x}{2})+c$

61. $\sqrt{2,25} + \sqrt[3]{0,027} - 6\sqrt[4]{0,0081} = ?$

A) 6 **B)** 2 **C)** 9 **D)** 0 **E)** 7

62. $\dfrac{\sqrt{3,6}+\sqrt{1,6}}{\sqrt{3-\dfrac{2}{9}-\sqrt{0,\overline{4}}}} = ?$

A) $\dfrac{1}{\sqrt{10}}$ **B)** $\dfrac{2}{\sqrt{5}}$ **C)** $\dfrac{\sqrt{10}}{5}$

D) $\dfrac{2\sqrt{10}}{5}$ **E)** $\sqrt{10}$

63.

3	2	9	6	8	10	1
7	9	5	1	7	4	4
2	9	7	8	5	2	0
10	7	0	6	8	5	3
1	10	9	7	6	9	0
8	5	2	3	0	2	1
7	10	0	7	3	5	7

I

A	B
B	C

II

D	A
C	E

A=9 B=7 C=0 D=? E=?

Her harf birbirinden farklı bir şekle karşılık gelmektedir. I ve II, yukarıdaki tablonun farklı birer parçasıdır. Buna göre II deki D ve E yerine aşağıdakilerden hangisi gelmelidir?

Each letter corresponds a different numerical symbol. Also let I and II be different parts of the above table. Therefore find out which of the following combinations should be replaced for D and E in II?

	D	E
A)	2	5
B)	6	2
C)	9	1
D)	6	3
E)	2	10

64. $f(x)=\begin{cases} ax^2+2x, & x\geq -1 \\ 2bx+1, & x<-1 \end{cases}$

fonksiyonu tüm reel sayılarda türevlenebilir olduğuna göre, $a.b$ çarpımı kaçtır?

If the function $f(x)$ can be derivable for every real numbers x, then what is the product of $a.b$?

A) 2 **B)** 1 **C)** 0 **D)** −1 **E)** −2

65. $(x-1).P(x+2)=x^2+mx+1$ **olduğuna göre, $P(x)$ polinomunun katsayılar toplamı kaçtır?**

Let $(x-1).P(x+2)=x^2+mx+1$. Then what is the sum of the coefficients of $P(x)$?

A) -2 **B)** 8 **C)** 5 **D)** -6 **E)** 3

66. a,b,c **pozitif tamsayılardır.** $a.b=30$ **ve** $b.c=42$ **olduğuna göre,** $a+b+c$ **toplamının en küçük değeri kaçtır?**

What is the minumum value of the summation $a+b+c$ under the rules $a.b=30$ and $b.c=42$, where a, b and c are positive integers?

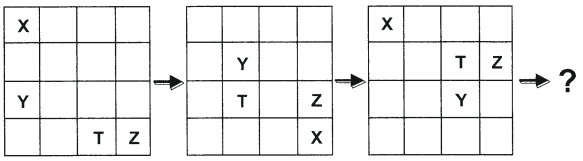
A) 78 **B)** 38 **C)** 27 **D)** 20 **E)** 18

67. The function $f:\mathbb{R}-\left\{-\frac{2}{3}\right\}\to\mathbb{R}-\left\{\frac{3}{2}\right\}$ **is defined by** $f(x)=\frac{2x-5}{3x+2}$. **Then calculate the** $f^{-1}(4)=?$

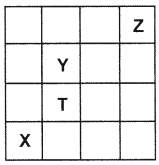
A) 3 **B)** $\frac{1}{2}$ **C)** 6 **D)** −7 **E)** $\frac{-13}{10}$

68. Verilen şekil dizisinde soru işaretinin yerine getirilmesi gereken şekli bulunuz.

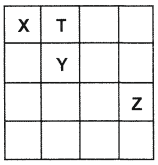
Find the correct figure that stands for the question mark in the given figure sequence.



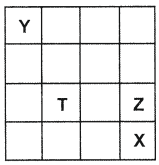
A)



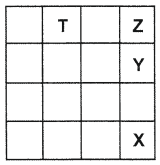
B)



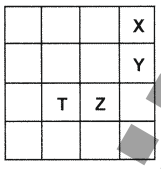
C)



D)



E)



69. $\dfrac{2^{24}+2^{25}+2^{26}}{2^{22}+2^{23}+2^{24}} = ?$

A) 2 **B)** 5 **C)** 4

D) 8 **E)** 12

70. $5^x = 3^y \Rightarrow 3^{\frac{3y}{x}} + 5^{\frac{2x}{y}} = ?$

A) 8 **B)** 14 **C)** 28

D) 134 **E)** 52

71. $\tan\alpha < 0$ **olduğuna göre, aşağıdakilerden hangisi daima negatiftir?**

If it is given $\tan\alpha < 0$, **then which of the following is always negative?**

A) $\sin\alpha - \cos\alpha$
B) $\tan\alpha.\cos\alpha$
C) $cot\alpha.\sin\alpha$
D) $\sin\alpha.\cos\alpha$
E) $\sin\alpha + \cos\alpha$

72. $f(x)=\begin{cases} x+1, & x<0 \\ x-2, & x\geq 0 \end{cases}$ **ve** $g(x,y)=\dfrac{3y-2}{xy+1}$

fonksiyonları tanımlanıyor.
Buna göre $(f\circ g)(0,1)$ **değeri kaçtır?**

For the functions $f(x)$ **and** $g(x,y)$**, what is the value of** $(f\circ g)(0,1)=?$

A) 3 **B)** 2 **C)** 10
D) 7 **E)** -1

73. $\dfrac{2x^2+x-1}{x^2-1}:\dfrac{2x^2+5x-3}{x^2+2x-3}=?$

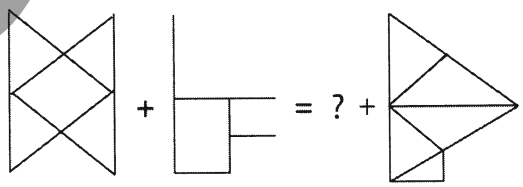
A) 1 **B)** $\dfrac{2x-1}{x+1}$ **C)** $\dfrac{x+3}{x+1}$
D) $\dfrac{x-1}{x+3}$ **E)** -1

74. $\dfrac{9}{2}.(2-\dfrac{2}{3}+\dfrac{4}{9})=?$

A) 8 **B)** 9 **C)** 10
D) 11 **E)** 12

75. Soru işaretinin yerine getirilmesi gereken şekli bulunuz.

Find the figure need to be replaced for the question mark?

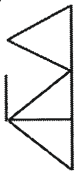


A) 

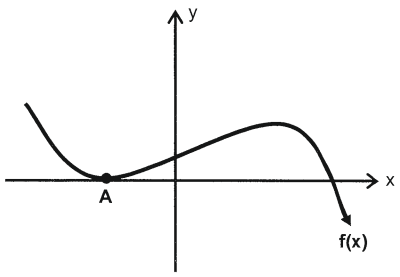
B) 

C) 

D) 

E) 

76.



$A(-1,0)$ **ve (and)** $f''(x)=6x+2$.
O halde (Then) $f(0)=?$

A) 2 **B)** $\frac{2}{3}$ **C)** $\frac{1}{2}$
D) -1 **E)** -2

77. $\frac{a,b}{ab}+\frac{ab}{0,ab}=?$

A) 1,01 **B)** 10,01 **C)** 100,1
D) 101 **E)** 101,01

78. $\int_{-2}^{2}\left(|x+1|+|x+2|\right)dx=?$

A) 14 **B)** 13 **C)** 12
D) 11 **E)** 10

79.

$$\left.\begin{matrix} 3A+B=\begin{bmatrix} 9 & -1 \\ 9 & 3 \end{bmatrix} \\ A-B=\begin{bmatrix} 3 & -11 \\ -1 & 1 \end{bmatrix} \end{matrix}\right\} \Rightarrow A=?$$

A) $\begin{bmatrix} -2 & 1 \\ 4 & 3 \end{bmatrix}$ B) $\begin{bmatrix} 3 & -3 \\ 2 & 1 \end{bmatrix}$ C) $\begin{bmatrix} 4 & -3 \\ 2 & 1 \end{bmatrix}$

D) $\begin{bmatrix} 0 & 3 \\ 5 & 7 \end{bmatrix}$ E) $\begin{bmatrix} -1 & 4 \\ 2 & 1 \end{bmatrix}$

80. $\int_0^{\ln 5} \left(e^{2x}-e^{x}\right)dx$ **integralinde** $e^x = t$ **dönüşümü yapılırsa, aşağıdaki integrallerden hangisi elde edilir?**

If we use the $e^x = t$ **transform in the integral** $\int_0^{\ln 5} \left(e^{2x}-e^{x}\right)dx$**, then which one of the following is obtained?**

A) $\int_1^5 \left(t^2-1\right)dt$ B) $\int_1^5 (t-1)\,dt$

C) $\int_1^5 \left(t^2-t\right)dt$ D) $\int_1^{\ln 5} (2t-1)\,dt$

E) $\int_1^{\ln 5} (t-1)\,dt$