

SÜYÖS KOORDİNATÖRLÜĞÜ

[ANA SAYFA](#) [HAKKINDA](#) [TANITIM](#) [SÜYÖS SINAVI](#) [İLETİŞİM](#)

► 2013 Sınav Soruları

1. I. $a \otimes b = \begin{cases} a^3 + b^3, & a < b \\ 3ab - 15, & a \geq b \end{cases}$

II. $(-2) \otimes (3 \otimes 2) = ?$

I. eşitlikte \otimes işleminin görevi belirlenmiştir. Buna göre, II. eşitlikte soru işaretinin yerine aşağıdakilerden hangisi gelmelidir?

In equation I, the operation of \otimes is established. According to this operation, which of the following does the question mark stand for in equation II?

- A) -5 B) -1 C) 7 D) 13 E) 19

2.

+	a	b	c
a			12
b	15		
c		a	

a = ?

Yukarıdaki toplama tablosunda a, b ve c harfleri pozitif birer sayıının yerine kullanılmıştır. Buna göre, a kaçtır?

In the addition table above, the letters a, b and c each stand for a positive number. Accordingly, what is the value of a?

- A) 7 B) 8 C) 9 D) 10 E) 11

B

3.

x	a	b
a		c+1
b	26	

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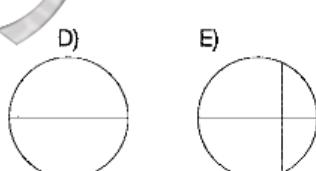
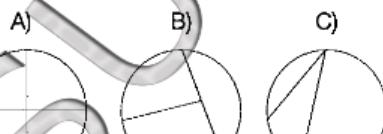
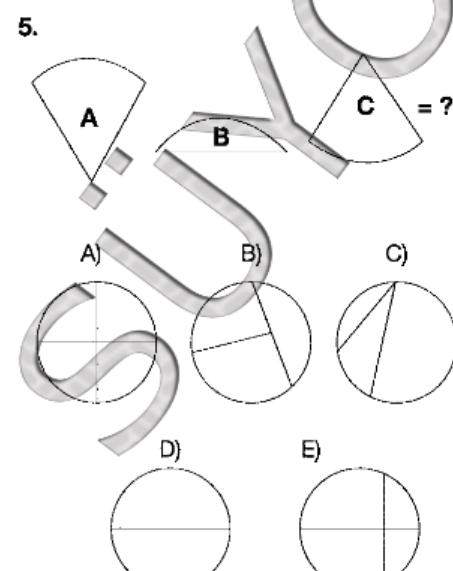
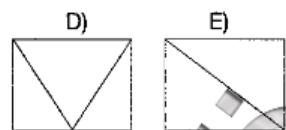
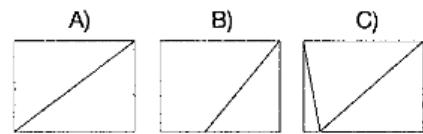
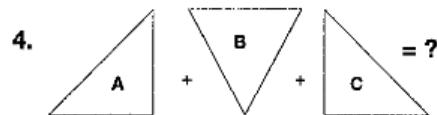
a = ?

Yukarıdaki çarpma ve toplama tablolarında a, b ve c harfleri pozitif birer sayıının yerine kullanılmıştır. Buna göre, a kaçtır?

In the multiplication and addition tables above, the letters a, b and c each stand for a positive number. Accordingly, what is the value of a?

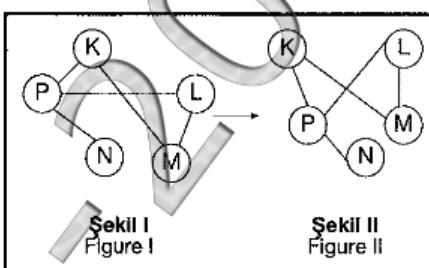
- A) 1 B) 2 C) 3 D) 4 E) 5

4. – 5. sorularda verilen parçalar kullanılarak oluşturulan şekli bulunuz.
In questions 4 – 5, find the figure using given fragments.



6. – 8. soruları örnekte verilen ilişkiye göre cevaplayınız.
In questions 6 – 8, find the correct answer in accordance with the relationship established in the example below.

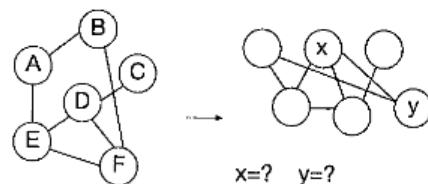
**ÖRNEK
EXAMPLE**



K, L, M, N ve P harfleri I. şekildeki gibi birbirine bağlanmıştır. I. şekildeki bağlantı sayıları ve birbirine bağlanan harfler değişimemek koşuluyla II. şekilde edilmişdir.

Letters K, L, M, N and P are linked as in Figure I. Figure II has been constructed so as not to change which letters are linked to which, and the number of links made with each letter, in Figure I.

6.



II.

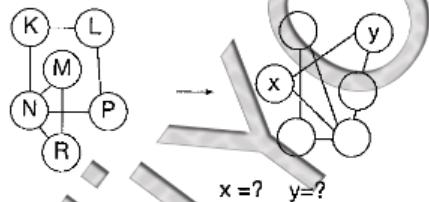
sekilde x ve y nin yerine gelmesi gereken harfleri bulunuz.
Find the letters that correspond to x and y in Figure II.

Find the letters that correspond to x and y in Figure II.

<u>X</u>	<u>Y</u>
----------	----------

- A) A B
- B) F B
- C) D C
- D) E F
- E) C A

7.



II. sekilde x ve y nin yerine gelmesi gereken harfleri bulunuz.

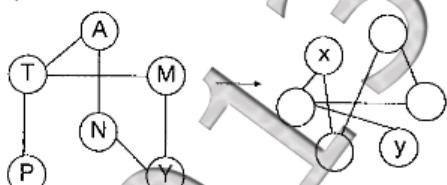
Find the letters that correspond to x and y in Figure II.

<u>X</u>	<u>Y</u>
----------	----------

- A) M R
- B) P L
- C) R L
- D) P M
- E) M K

B

8.



II. sekilde x ve y nin yerine gelmesi gereken harfleri bulunuz.

Find the letters that correspond to x and y in Figure II.

<u>X</u>	<u>Y</u>
----------	----------

- A) M N
- B) T A
- C) T P
- D) M P
- E) N A

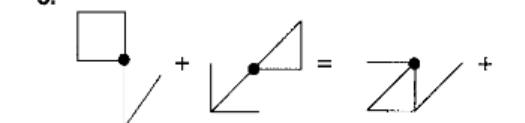
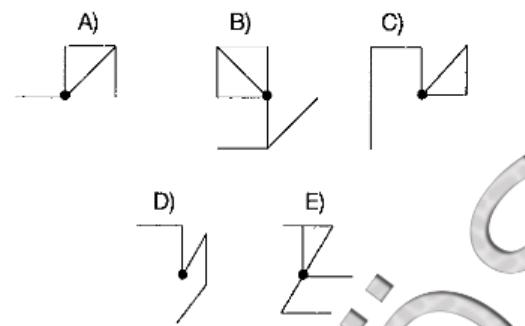
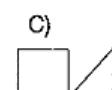
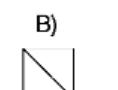
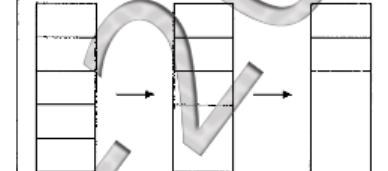
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B

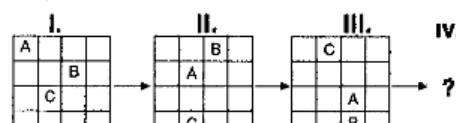
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9. – 10. sorularda, soru işaretinin yerine getirilmesi gereken şekli bulunuz.

In questions 9 – 10, find the figure to replace the question mark.

9.**10.****A)****D)****E)****11.****I.****II.****III.****IV.****20****12****6****?****A)****B)****C)****D)****E)**

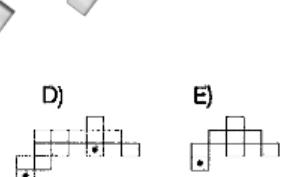
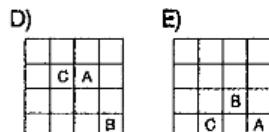
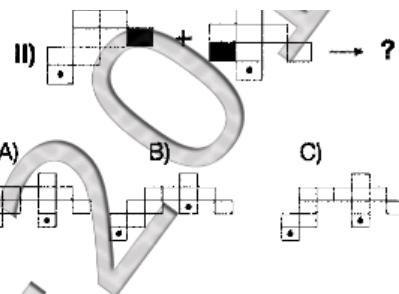
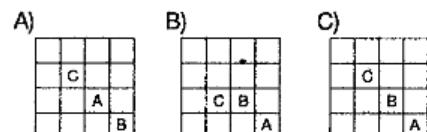
4

12.

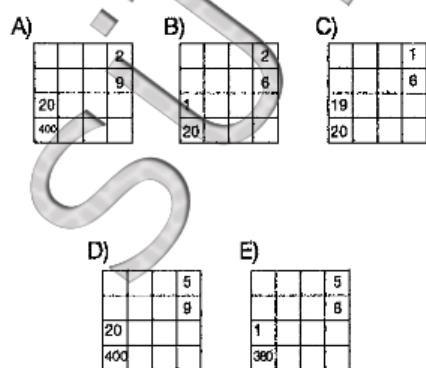
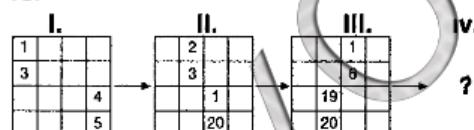
B

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14.**I)**



13.



5

15.-16. sorulardaki (a_n) sayı dizisinde $a_1=2$, $a_2=3$, $a_3=2$ ve $n \geq 4$ için $a_n = a_{n-1} \cdot a_{n-2} \cdot a_{n-3}$ olarak verilmiştir.
In questions 15.-16.(a) number sequence is given as $a_1=2$, $a_2=3$, $a_3=2$ and $n \geq 4$, $a_n = a_{n-1} \cdot a_{n-2} \cdot a_{n-3}$

15. $a_4 + a_5 + a_6 = ?$

- A) 1 B) 2 C) 4
 D) 6 E) 8

17. ve 18. sorularda, I. gruptaki sözcüklerin harfleribirer rakamla gösterilerek II. gruptaki sayılarla edilmiştir. Soru işaretiley belirtlen sözcüğün hangi sayıya gösterildiğini bulunuz.

In questions 17 and 18, the numbers in group II stand for the words in group I, when each letter has been coded with a specific numeral. Find the number which corresponds to the word indicated by the question mark.

17. I. II.
 B A C A 2434 4681 4147
 B E R E 2575 6595
 A K A R
 A C I K
 - - - - -

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16. $a_{24} + a_{25} + a_{26} + a_{27} = ?$

- A) 0 B) 4 C) 8
D) 12 E) 16

C E T E J Y

A Ç I K = ?

- A) 2434 B) 2575 C) 4147
D) 4681 E) 6595

18. I.

K A S A
Y A K A
K U T U
M A L A
K A L E

1232 1289 7282
1565 4212

II.

- A) 1232 B) 2787 C) 7282
D) 2787 E) 7828

6

19. ve 20. soruları aşağıdaki tabloya göre cevaplayınız.

Answer questions 19 and 20 in accordance with the table given below.

Δ	A	B	C	D	E
A	C	D	E	A	B
B	D	E	A	B	C
C	E	A	B	C	D
D	A	B	C	D	E
E	B	C	D	E	A

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B

21.

x	a	b
a	$a+12$	
b		$6a+1$

Yukarıdaki çarpmaya tablosunda a ve b harfleri pozitif birer sayıya yerine kullanılmıştır. Buna göre, b kaçtır?

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

- A) 4 B) 5 C) 6 D) 7 E) 8

Tabloda Δ işleminin görevi belirlenmiştir.

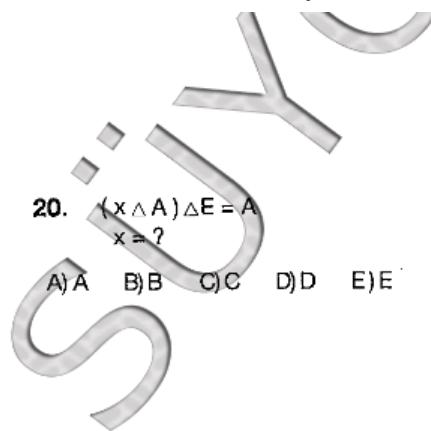
The operation of Δ is established in the table

$$A \Delta D = A$$

$$B \Delta C = A$$

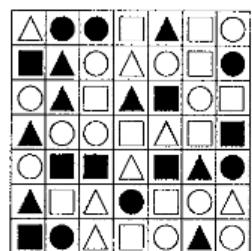
19. $(A \Delta B) \Delta (C \Delta D) = ?$

- A) A B) B C) C D) D E) E



7

22.



I. II.

L
L
G

G	F
K	G

L = ▲, G = ○

F = ? , K = ?

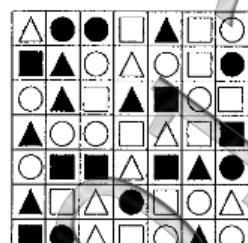
I ve II, yukarıdaki tablonun farklı birer parçasıdır. Buna göre, II deki F ve K nin yerine aşağıdakilerden hangisi gelmelidir?

I and II are different parts of the figure above. Accordingly, which of the following combinations should replace F and K in II?

- A) B) C) D)

B

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T
T
A

Y
Z

Y = ?, Z = ?

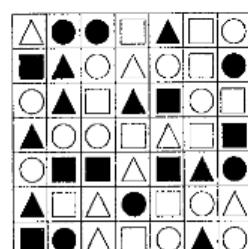
I ve II, yukarıdaki tablonun farklı birer parçasıdır. Buna göre, II deki Y ve Z nin yerine aşağıdakilerden hangisi gelmelidir?

I and II are different parts of the figure above. Accordingly, which of the following combinations should replace Y and Z in II?

- | | |
|----------|----------|
| <u>Y</u> | <u>Z</u> |
|----------|----------|
- A) B) C) D)



8

**24.**

I.
II.

$$R = \triangle, T = \blacksquare \quad E = ?, N = ?$$

I ve II, yukarıdaki tablonun farklı birer parçasıdır.
Buna göre, II deki E ve N nin yerine aşağıdakilerden hangisi gelmelidir?

I and II are different parts of the figure above.
Accordingly, which of the following combinations should replace E and N in II?

- A)
B)
C)
D)
E)

B

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I. $a \triangle b = a.b$

II. $a * b = (a+2).b$

III. $(2 \triangle 3) * 5 = ?$

I. ve II. eşitliklerde \triangle ve $*$ işlemlerinin görevleri belirlenmiştir. Buna göre, III. eşitlikte soru işaretinin yerine aşağıdakilerden hangisi gelmelidir?

In equations I and II, the operations of \triangle and $*$ are established. According to those operations, which of the following does the question mark stand for in equation III?

- A) 35 B) 36 C) 37 D) 38 E) 40

26. ve 27. sorularda, I. gruptaki kümelerin şekilleri birer rakamla gösterilerek II. gruptaki sayılar elde edilmiştir. Soru işaretiley belirtilen kümeyihangi sayıyla gösterildiğini bulunuz.

In questions 26 and 27, the numbers in group I stand for the sets of figures in group I, when each figure has been coded with a specific numeral. Find the number which corresponds to the set of the figures indicated by the question mark.

26. I. II.

- | | |
|--|--------------------------------------|
| \triangle \square \star
\star \circ \square
\square \wedge \circ
\circ \triangle \star
\square \star \square | {
124 435 213
542 314 |
|--|--------------------------------------|

$$\square \triangle \circ = ?$$

- A) 124 B) 213 C) 435
D) 542 E) 314

27.

I. 	II.
---------------	----------------

$\blacksquare \triangle \square * = ?$

- A) 3462 B) 3642 C) 3624
 D) 3264 E) 3426

28.-30. soruları aşağıdaki şekilde göre cevaplayınız.

Answer questions 28 - 30 in accordance with the figure given below.

$$\begin{array}{cccc} a-b & a+c & c-d \\ a & c & \\ a-b & d & c \\ b & & d \end{array}$$

Yukarıdaki şekil a, b, c ve d harfleriyle gösterilen dört pozitif tam sayıyı içeren bazı işlemlere göre düzenlenmiştir. Harflerin gösterdiği sayılar her soruda farklı olabilir fakat, bunları yapılacak işlemler her soruda aynıdır.

The figure above has been organized according to various operations using four positive integers represented by the letters, a, b, c and d. The integers represented by the letters may change from question to question, but the operations to be done remain the same.

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28.

$K = ?$

Yukarıda verilen şeke göre, K kaçtır?

According to the figure above, what is the value of K?

- A) $\frac{1}{2}$ B) 1 C) $\frac{3}{2}$ D) 2 E) $\frac{5}{2}$

29.

$K = ?$

Yukarıda verilen şeke göre, K kaçtır?

According to the figure above, what is the value of K?

- A) 12 B) 14 C) 16 D) 18 E) 20

30.

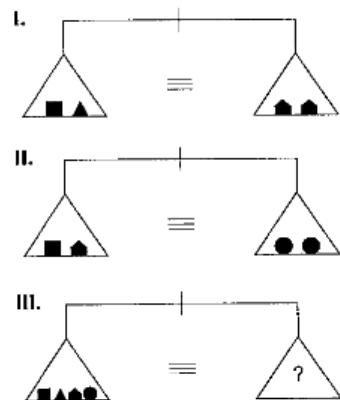
$K + L = ?$

Yukarıda verilen şeke göre, K+L kaçtır?

According to the figure above, what is the value of K + L?

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

31.



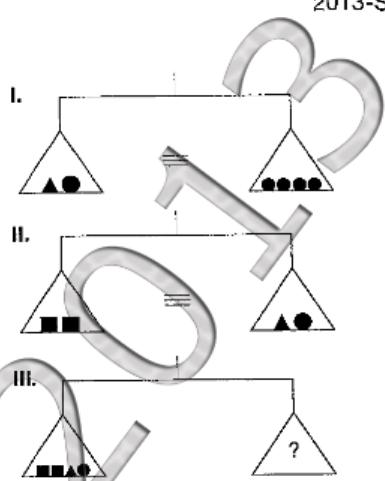
Yukarıdaki terazilerin üçü de dengede olduğuna göre, III. terazide soru işaretleri aşağıdakilerden hangisini göstermektedir?

All three scales above are in balance. Accordingly, which of the following does the question mark stand for in the third scale?

- A) ▲▲▲● B) ●●●▲ C) ▲■
D) ●● E) ●▲▲

B

32.

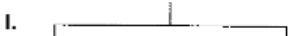


Yukarıdaki terazilerin üçü de dengede olduğuna göre, III. terazide soru işaretleri aşağıdakilerden hangisini göstermektedir?

All three scales above are in balance. Accordingly, which of the following does the question mark stand for in the third scale?

- A) ▲● B) ▲▲●● C) ●●▲
D) ●●● E) ■■

33.

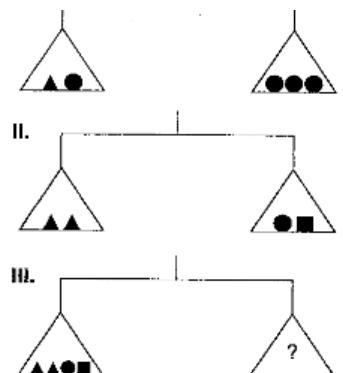


B

35.



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Yukarıdaki terazilerin üçü de dengede olduğuna göre, III. terazide soru işaretini aşağıdakilerden hangisini göstermektedir?

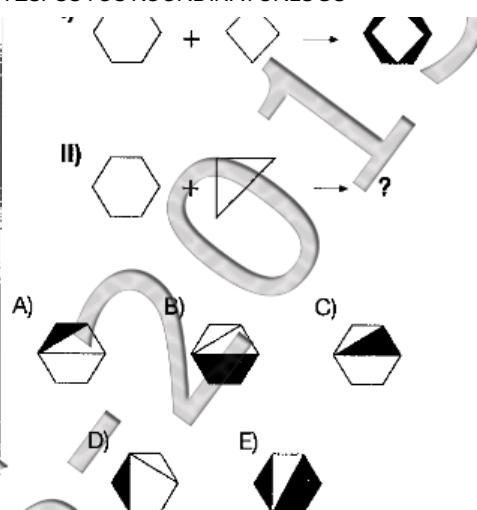
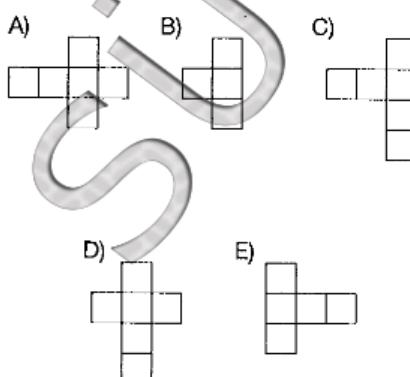
All three scales above are in balance. Accordingly, which of the following does the question mark stand for in the third scale?

- A) ▲▲▲▲ B) ●●●● C) ●▲
D) ▲▲ D) ■▲ E)

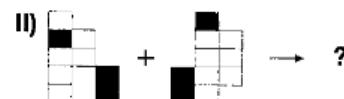
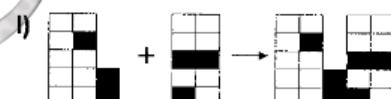
34.

Aşağıdakilerden hangisi üstü açık bir küpün açılmıştır.

(Which one is the expansion of the open cube)



36.



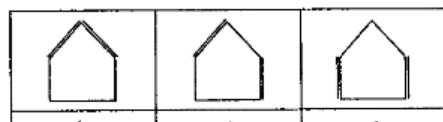
- A) B)
C) D)
E)

12

37. – 40. sorularda, verilen şekil matrisinde soru işaretinin yerine hangi şeklin getirilmesi gerekliliğini bulunuz. gereken şekil bulunuz.

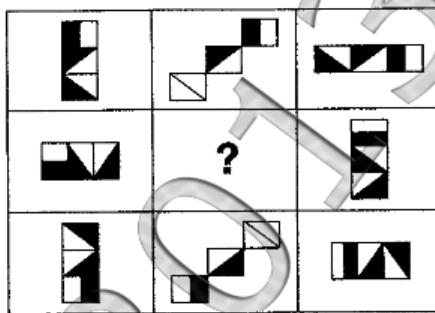
In questions 37. – 40. find the figure which the question mark stands for in the given figure matrix.

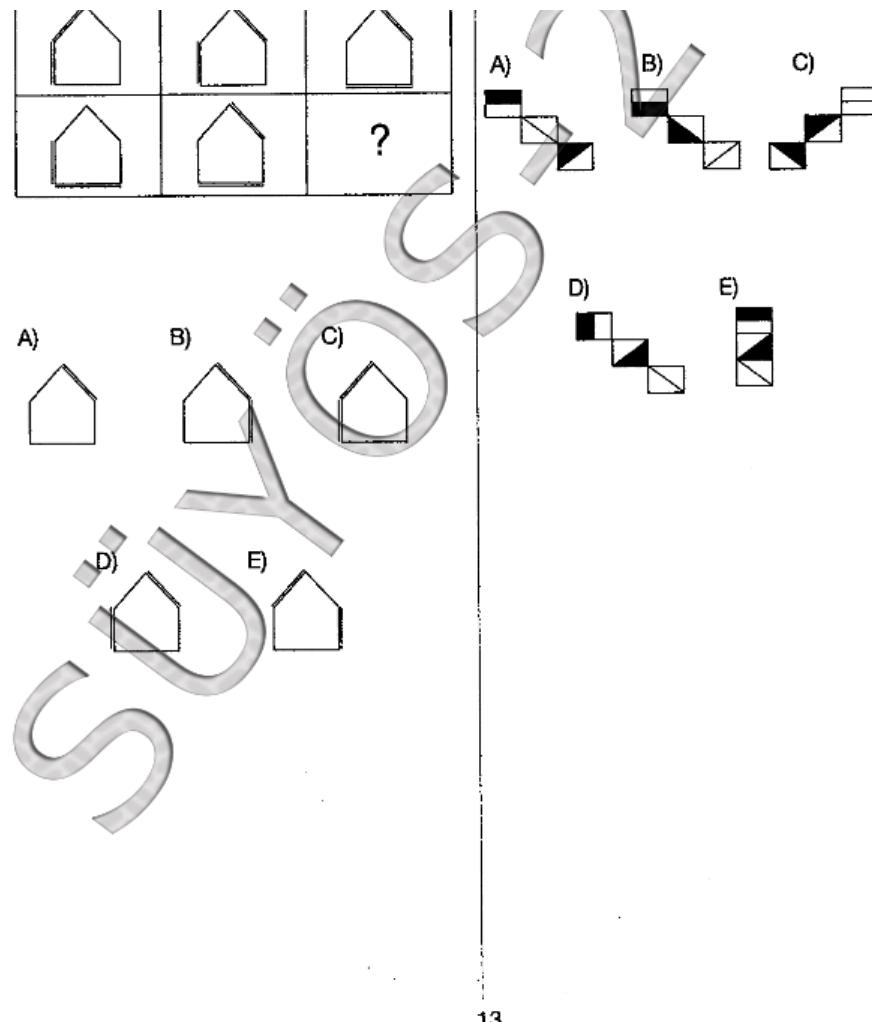
37.



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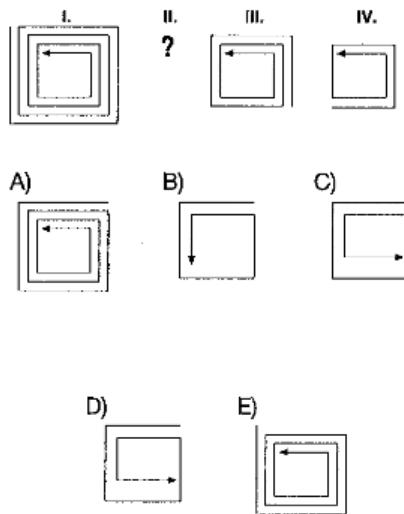
38.



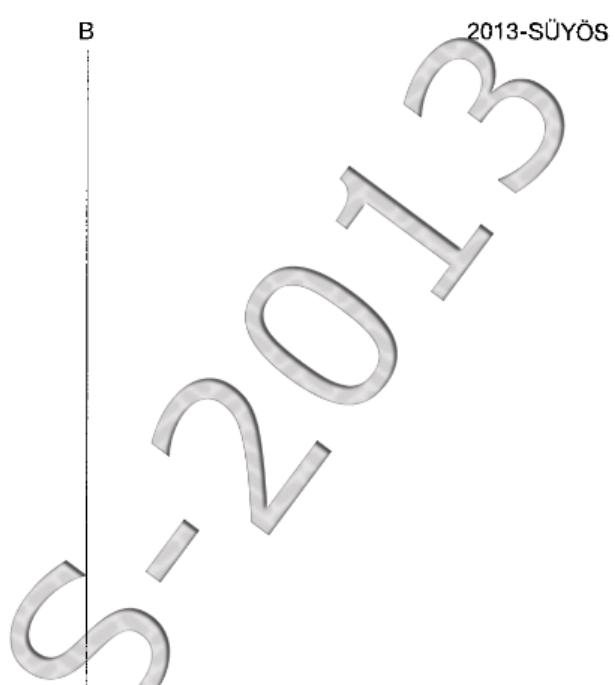


13

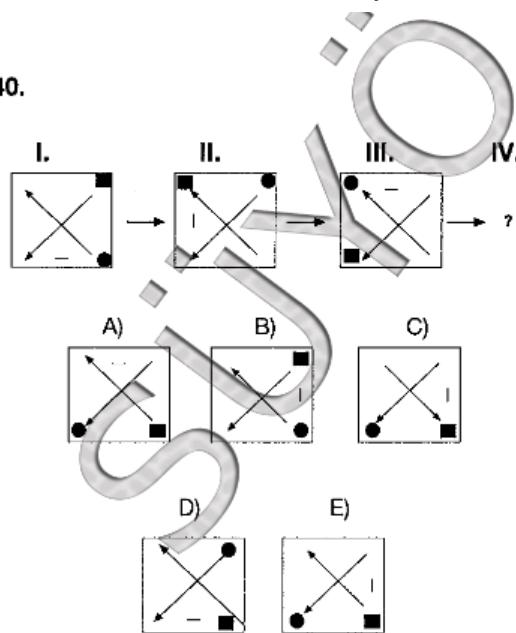
39.



B



40.



14

41.

$$\frac{\sqrt{3,61} + \sqrt{1,69}}{\sqrt{1,44} - \sqrt{0,64}} = ?$$

- A) 8 B) -8 C) 0,4 D) 0,8 E) 13

42.

$$\frac{a}{b} = \frac{2}{3}, a - b = \frac{5}{2}$$

$$a = ?$$

- A) 2 B) -1 C) 1 D) 5 E) -5

43.

$$(1 - C_{\text{new}})^{-4x}$$

B

44.

$$\log_4 2 + \log_2 3 - \log_3 27 = ?$$

- A) 2 B) -2 C) $\log_3 2$
D) $\log_2 3$ E) $-\log_3 2$

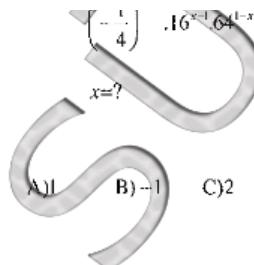
45.

$$\lim_{x \rightarrow 1} \frac{x^2 + 3x - 4}{x^2 + 7x - 8} = ?$$

- A) $\frac{5}{9}$ B) $-\frac{5}{9}$ C) $\frac{3}{7}$ D) $-\frac{3}{7}$ E) $\frac{1}{2}$

46.

$$(1 - C_{\text{new}})$$



$$\left(\frac{-1}{4}\right) \cdot 16^{x-1} \cdot 64^{1-x} = 256$$

$$x=?$$

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

$$f(x) = \ln\left(\frac{1-\cos x}{\sin x}\right)$$

$$f'\left(\frac{\pi}{2}\right) = ?$$

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

15

47.

$$\frac{1}{4} - \left(\frac{1}{4} - \frac{1}{2} \right) - \left(\frac{1}{3} - \frac{1}{6} \right) - \frac{1}{6} = ?$$

- A) $\frac{1}{3}$ B) $\frac{1}{2}$ C) $\frac{1}{6}$ D) $-\frac{1}{6}$ E) $\frac{1}{4}$

B

50.

$$f(x) = \log_5 e^{5x}$$

$$f'(x) = ?$$

- A) $5/\ln 5$ B) $-5x$ C) $\ln 5$ D) $-\ln 5$ E) $5x$

2013-SÜYÖS

51.

$$\int_{\frac{3}{4}}^{\frac{5}{4}} \frac{dx}{x^2 - 5x + 6} = ?$$

- A) $-\ln\left(\frac{4}{3}\right)$ B) $\ln\left(\frac{5}{4}\right)$ C) $\ln\left(\frac{4}{5}\right)$

D) $\ln\left(\frac{4}{3}\right)$ E) $\ln\left(\frac{3}{4}\right)$

48.

$$\begin{cases} x-2y=-1 \\ 2x+y=3 \end{cases} \Rightarrow \frac{2x^2 - 3xy - 4y^2}{x + y} = ?$$

$$\frac{x+y}{3+2}$$

- A) 12 B) -12 C) 6 D) -6 E) 1

49.

$$\frac{\cos 105^\circ}{\sin 15^\circ} = ?$$

- A) $-\frac{\sqrt{3}}{2}$ B) $\frac{\sqrt{3}}{2}$ C) $\sin 15^\circ$ D) 1 E) -1

52.

$$\lim_{x \rightarrow 0} \frac{x + 2x \cos x}{3 \sin x \cos x} = ?$$

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

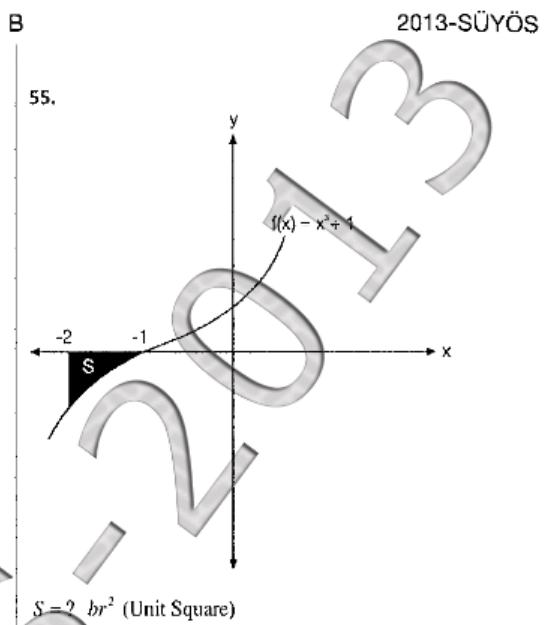
16

53.

$$y = (x^2 + 1)^{5\ln x}$$

$$y'(0) = ?$$

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



54.

$$f(x) = 2x^2 + 1, g(x) = x - 2,$$

$$(f \circ g^{-1})(2) = ?$$

- A) 13 B) 15 C) 17 D) 19 E) 33

56.

$$\lim_{x \rightarrow \infty} \frac{\int_0^x \cos(t^2) dt}{x} = ?$$

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

17

57.

$$\sqrt{3} \cdot \sin \frac{\pi}{6} \cdot \cos \frac{\pi}{6} = ?$$

- A) 1 B) $\sqrt{3}/2$ C) 1/2 D) 3/4 E) 1/4

58.

$$\left[\left(2 - \frac{1}{3} \right) : \left(\frac{0,04}{0,4} \right) \right] - \frac{2}{3}$$

- A) -4 B) 4 C) 2 D) 16 E) -16

59.

$$\sqrt[3]{a+1} - \sqrt[3]{16a+16} + 2\sqrt[3]{81a+81} = 10$$

 $a=?$

- A) 1 B) -8 C) 8 D) -15 E) 15

B

60.

$$\lim_{x \rightarrow 0} \frac{x - x \sin x \cos x}{\sin x \cos x} = ?$$

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

2013-SÜYÖS

61.

$$\log_5 2 = x$$

$$\log_{\sqrt{125}} \left(\frac{1}{64} \right) = ?$$

- A) x B) $-x$ C) $-2x$
D) $4x$ E) $-4x$

62.

$$\int_{-1}^1 \frac{d}{dx} (x^3 + x) dx = ?$$

- A) -4 B) -2 C) 0 D) 2 E) 4

63.

$$f(x) = |\cos x|$$

$$f'\left(\frac{3\pi}{4}\right) = ?$$

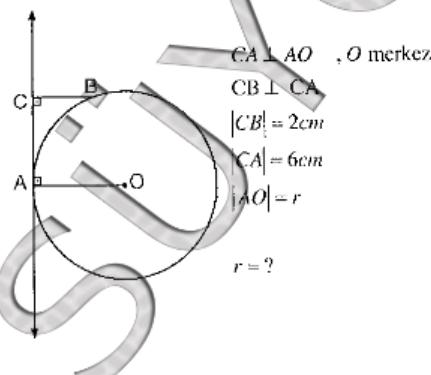
- A) $-\sqrt{2}/2$ B) $-1/2$ C) 0 D) $1/2$ E) $\sqrt{2}/2$

64.

$$\lim_{x \rightarrow 0} \frac{e^x - (1+x)}{x^2} = ?$$

- A) $-\infty$ B) 0 C) $1/2$ D) 1 E) ∞

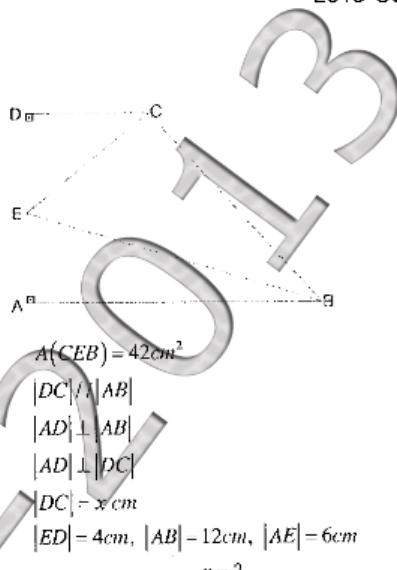
65.



- A) 6 B) 7 C) 8 D) 9 E) 10

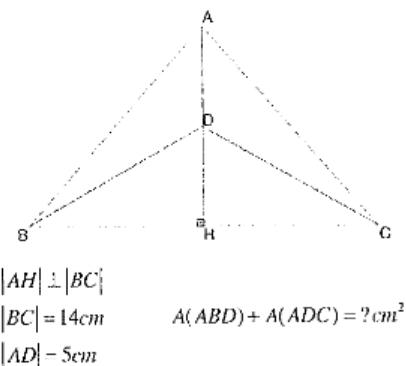
B

66.



- A) 5 B) 6 C) 7 D) 8 E) 9

67.



- A) 35 B) 40 C) 42 D) 45 E) 54

19

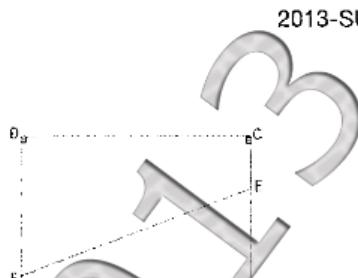
B

68.

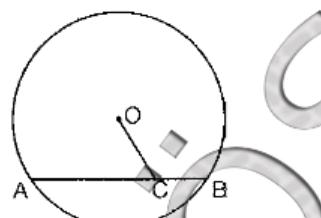
$$\frac{\sin 7^\circ \cos 7^\circ}{\sin 83^\circ \cos 97^\circ} = ?$$

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

70.



69.

 O merkez

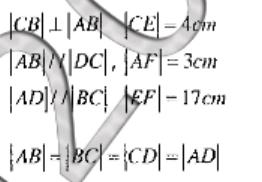
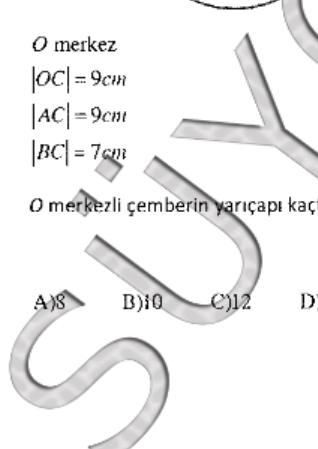
$|OC| = 9\text{ cm}$

$|AC| = 9\text{ cm}$

$|BC| = 7\text{ cm}$

 O merkezli çemberin yarıçapı kaçtır?

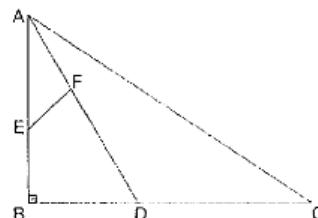
- A) 8 B) 10 C) 12 D) 14 E) 16



$A(ABCD) = ? \text{ cm}^2$

- A) 225 B) 169 C) 144 D) 100 E) 81

71.



$|AB| \perp |BC|$

$|AE| = |EB|$

$|BD| = |DC|$

$|AD| = 3|AF|$

$|AC| = 30$

$|EF| = ?$

- A) 5 B) 6 C) 7 D) 8 E) 9

20

72.

$0,025a + 0,08 = 0,015a + 0,07$

$a = ?$

- A) 1 B) -1 C) 5 D) -5 E) 2

73.

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75.

$i^2 = -1$

$1 + \left(\frac{1-i}{1+i}\right) + \left(\frac{1-i}{1+i}\right)^2 + \dots + \left(\frac{1-i}{1+i}\right)^{20} = ?$

- A) 1 B) -1 C) i D) $-i$ E) 0

76.

$i^2 = -1 \sec \frac{i}{1-i} + \frac{2i-1}{1+i} = ?$

$f(9) = 9, f'(9) = 1$

$$\lim_{x \rightarrow 9} \frac{3 - \sqrt{f(x)}}{3 - \sqrt{x}} = ?$$

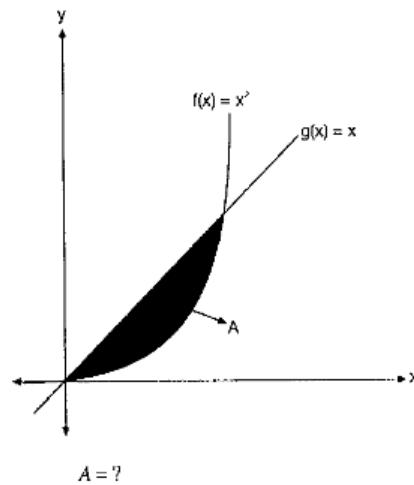
- A) -2 B) -1 C) 0 D) 1 E) 2

74.

$$\int \frac{\sin x}{1 - \cos x} dx = ?$$

- A) $\ln|\sin x| + c$ B) $\ln|\cos x| + c$ C) $\ln|1 - \cos x| + c$
 D) $\ln|1 - \sin x| + c$ E) 0

77.



- A) -1/2 B) 1/3 C) -1/6 D) 1/6 E) 1/2

21

78.

$$f(x) = \cos(\sin(2x))$$

$$f'(\pi/4) = ?$$

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

B

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TEST BİTTİ.

CEVAPLARINI KONTROL EDİNİZ.

END OF TEST.

PLEASE CHECK YOUR ANSWERS.

79.

$$f(x) = \ln\left(\frac{e^x}{x^2 + 1}\right),$$

$$f'(1) = ?$$

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

80.

$$\frac{x^3 + y^3}{(x+y)^2} \cdot \frac{x+y}{xy - x^2 - y^2} = ?$$

A) -1 B) 1 C) $x - y$
 D) $x + y$ E) $1 - x$

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