



Kitapçık Türü / Booklet Code: 210703

İÜCYÖS 2021

## YURTDIŞINDAN VEYA YABANCI UYRUKLU ÖĞRENCİ SINAVI

EXAMINATION FOR FOREIGN OR OVERSEAS STUDENTS

ADI / NAME		KİTAPÇIK TÜRÜ BOOKLET TYPE  <b>C</b>
SOYADI / SURNAME		
ADAY NO / APPLICANT NUMBER		
SINAV SALON ADI EXAM ROOM NAME		

## TEMEL ÖĞRENME BECERİLERİ TESTİ

BASIC LEARNING SKILLS TEST

### GENEL AÇIKLAMA

Bu sınavdaki soruların nasıl cevaplanacağı, testlerin başında 1- açıklanmıştır. Soruları cevaplamaya başlamadan önce bu açıklamaları dikkatle okuyunuz.

Bu testlerdeki her sorunun bir tek doğru cevabı vardır. Bir soru 2- için birden çok cevap yeri işaretlenmişse, o soru yanlış cevaplanmış sayılacaktır.

Cevap kağıdında imzanızı ayrılmış alana atınız ve kitapçık türünü 3- mutlaka kodlayınız. Kitapçık türünü kodlamadığınızda veya eksik kodladığınızda sınavınız değerlendirilmeye alınmayacaktır.

Cevaplarınızı koyu siyah ve yumuşak bir kurşun kalemle 4- işaretleyiniz. İşaretlerinizi cevap yerinin dışına taşımayınız. Tükenmez kalem veya dolma kalem kullanmayınız.

Cevap kağıdınızı buruşturmayınız, katlamayınız ve üzerine 5- gereksiz hiçbir işaret koymayınız.

Değiştirmek istediğiniz bir cevabı, yumuşak bir silgiyle, cevap 6- kağıdını örselemeden, temizce siliniz ve yeni cevabınızı işaretlemeyi unutmayınız.

Bu testler puanlanırken, doğru cevaplarınızın sayısından yanlış 7- cevaplarınızın sayısını dörtte biri düşülecek ve kalan sayı net cevap sayınız olacaktır.

8- Sınavda uyulacak diğer kurallar bu kitapçığın arka kapağında belirtilmiştir.

### GENERAL INSTRUCTIONS

1- The exam instructions appear at the beginning of the tests. Please read them carefully before beginning.

In these tests there is only one correct answer for each question. If 2- more than one alternative is marked for a question, that answer will automatically be considered wrong.

Sign the answer sheet on the specified field "Signature". It is 3- extremely important that you mark the booklet type. An applicant's examination is declared invalid if she/he does not mark the booklet group.

You should use a soft, black pencil to mark the answer sheet. 4- Completely fill in the circle for the answer you have chosen, but make sure your mark does not go beyond the borders of the circle. Do not use any kind of pen.

5- Keep the answer sheet flat and do not fold it. Do not make any unnecessary marks on it.

6- If you wish to change an answer, carefully erase it completely with a very soft eraser. Do not forget to mark your answer.

In the scoring of the tests, for every four incorrect answers, one 7- correct answer will be deducted; the remaining will be your net answers.

8- The other regulations concerning the administration of the tests are mentioned at the back of the booklet.

فتنترك أثراً

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لمتابعة الاخبار

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1.  $A = (-\infty, 2]$   
 $B = [5, \infty)$   $\Rightarrow (A' \cap B') = ?$

- A)  $(-\infty, \infty)$       B)  $(2, 5]$       C)  $[2, 5]$   
D)  $[2, 5]$       E)  $(2, 5)$

2.  $(3a - 5b)^2 + (2b - 3c)^2 = 0$   
 $\Rightarrow \frac{2a - 4b + 5c}{b - 3c} = ?$

- A)  $-\frac{7}{2}$       B)  $-\frac{8}{3}$       C)  $-\frac{11}{6}$       D)  $\frac{5}{2}$       E)  $\frac{10}{3}$

3.  $\frac{(\frac{1}{2} + \frac{1}{5}) : (0.24 - 0.1 \times 0.3)}{(2.\bar{9})^{-1} \times \frac{1}{10}} = ?$

- A) 0.01      B) 0.1      C) 0.9      D) 90      E) 100

4.  $(48x - y) - (47x - y) + \dots - (x - y) = ?$

- A)  $x - y$       B)  $y$       C)  $24x$   
D)  $8x - 2y$       E)  $48x$

5.  $x \in \mathbb{N}$ ,

$$2^{1-\frac{x^2}{4}} \leq 1 \leq 5^{5-x} \Rightarrow \sum x = ?$$

A) 4    B) 5    C) 9    D) 14    E) 17

$$6. \frac{\sqrt{12} - \sqrt{28} + \sqrt{15} - \sqrt{35}}{(-2 - \sqrt{5})} \cdot (\sqrt{3} + \sqrt{7}) = ?$$

A) 2    B) 3    C) 4    D) 5    E) 7

7.  $x, y, z \in \mathbb{R}$ 

$$\begin{cases} \frac{yz}{y+z} = \frac{4}{11} \\ \frac{xz}{x+z} = 2 \\ \frac{xy}{x+y} = \frac{3}{10} \end{cases} \Rightarrow \frac{13x}{y} - z = ?$$

A) 24    B) 42    C) 67    D) 91    E) 120

$$8. \frac{5x+a}{b-4x} \geq 0, \quad x \in [-3, 1) \Rightarrow \min(a+b) = ?$$

A) 4    B) 11    C) 15    D) 19    E) 20



9.  $\frac{x^4 + 3x^2 + 4}{x^4 + x^3 + 2x^2} = ?$

A)  $\frac{x-2}{x^2+x+1}$

B)  $\frac{x^2+x+2}{x}$

C)  $\frac{x^2-x+2}{x^2}$

D)  $\frac{x^2}{x+2}$

E)  $\frac{x^2+x+1}{x+1}$

10.  $a, b \in \mathbb{Z}^-, \frac{1}{a} > \frac{1}{b}$

$\Rightarrow |b-a| + |2b+a| - |b| = ?$

A)  $-2b-2a$

B)  $-2b$

C)  $-2a$

D) 0

E)  $b-2a$

11.  $\left(\sqrt{x} + \frac{1}{2\sqrt{x}}\right)^2 + 2\left(\sqrt{x} + \frac{1}{2\sqrt{x}}\right) + 1 = 0$

$\Rightarrow x^2 + \frac{1}{16x^2} = ?$

A)  $-\frac{1}{2}$

B)  $-\frac{1}{4}$

C) 0

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

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

12.  $z_1 = 7 + 3i$   
 $z_2 = 5 - 2i$   $\Rightarrow z_1 - z_2 = ?$

A) 2

B)  $2 + i$

C)  $2 + 5i$

D)  $2 - i$

E)  $12 + i$



13.  $z = \frac{\cos 75 + i \sin 75}{\cos 30 + i \sin 30} \Rightarrow z = ?$

A)  $\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i$     B)  $\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2}i$     C)  $\frac{1}{2} + \frac{\sqrt{2}}{2}i$

D)  $\frac{1}{2} - \frac{\sqrt{2}}{2}i$     E)  $\frac{\sqrt{3}}{2} + \frac{\sqrt{2}}{2}i$

14.  $\ln(x - 1) + \ln 5 = 1 \Rightarrow x = ?$

A)  $\frac{e + 5}{5}$     B)  $\frac{e + 1}{5}$     C)  $\frac{e}{5}$

D)  $\frac{e - 1}{5}$     E)  $\frac{e - 5}{5}$

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

A) 24    B) 25    C) 26    D) 27    E) 28

16.  $\sin x - \cos x = \frac{2}{\sqrt{10}} \Rightarrow \tan 2x = ?$

A)  $\frac{3}{4}$     B)  $\frac{1}{2}$     C)  $\frac{5}{12}$     D)  $\frac{3}{10}$     E)  $\frac{1}{5}$



17.  $P^3(x) = 64.P(x+1) \Rightarrow P(3) + P(2) = ?$

- A) 1    B) 4    C) 8    D) 16    E) 20

18.  $g(3x+1) = \begin{cases} x-2, & x \geq 2 \\ x^2, & x < 2 \end{cases}$

$\Rightarrow g(4) + g(10) = ?$

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

19.  $f(x) = -x + 2$

$g(x) = -x^2 + 5$

$\Rightarrow (f \circ g)(3) = ?$

- A) 1    B) 3    C) 4    D) 6    E) 9

20.  $f: \mathbb{N} \rightarrow \mathbb{N}$

$f(x) = \sqrt{x} - 2 \Rightarrow f(36) + f(49) = ?$

- A) 15    B) 12    C) 9    D) 6    E) 3

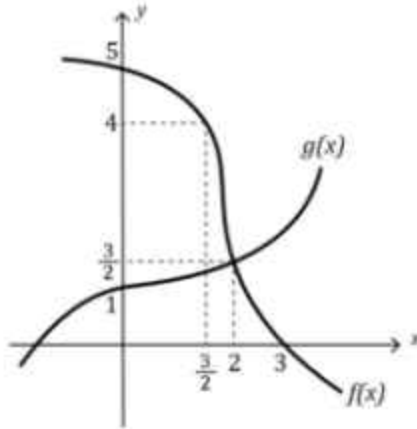
21.  $g(x) = c \quad (c \in \mathbb{R})$

$$g(x) = (a - 2)x^2 + (b + 5)x + a \cdot b$$

$$\Rightarrow g(x) = ?$$

- A) -10    B) -6    C) -2    D) 2    E) 5

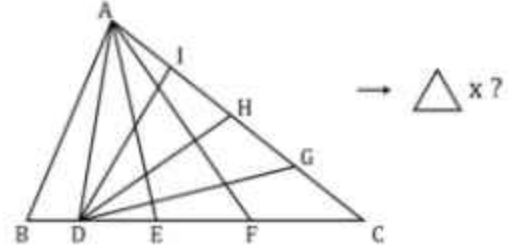
22.



$$g(0) + f(3) + (f \circ g)(2) = ?$$

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

23.



- A) 42    B) 46    C) 50    D) 54    E) 60

24.  $f: [-1, 6] \rightarrow \mathbb{R}, \quad a, b \in \mathbb{R}$

$$\left. \begin{array}{l} f(x) = x^2 - 6x + 12 \\ f(a) = b \end{array} \right\} \Rightarrow P(a \geq b) = ?$$

- A)  $\frac{1}{8}$     B)  $\frac{1}{7}$     C)  $\frac{1}{4}$     D)  $\frac{3}{7}$     E)  $\frac{4}{7}$





25.  $\lim_{x \rightarrow \infty} \frac{\sin x}{x} = ?$

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

26.  $\lim_{x \rightarrow 9} \frac{x-9}{\sqrt{x}-3} = ?$

- A) 0 B) 1 C) 3 D) 6 E)
- $\infty$

27.  $\prod_{k=1}^n 2^k = 1024 \quad n \in \mathbb{Z}^+ \Rightarrow n = ?$

- A) 256 B) 64 C) 32 D) 9 E) 4

28.

$$A = \begin{pmatrix} 4 & 0 & 0 \\ 0 & 4 & 0 \\ 0 & 0 & 4 \end{pmatrix}, \quad B = \begin{pmatrix} \frac{1}{32} & 0 & 0 \\ 0 & \frac{1}{32} & 0 \\ 0 & 0 & \frac{1}{32} \end{pmatrix}$$

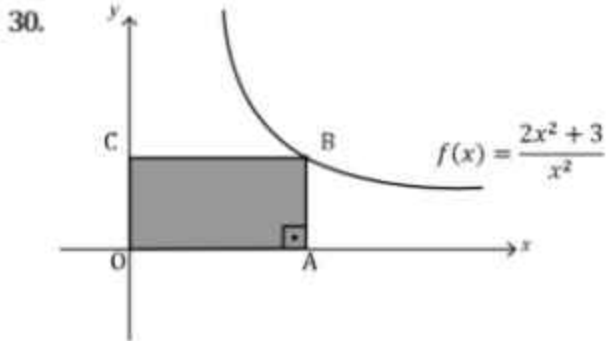
$$\Rightarrow B^{-1} \cdot A^{-1} = ?$$

- A)
- $2^{-3}I_3$
- B)
- $2^{-2}I_3$
- C)
- $2I_3$
- 
- D)
- $2^2I_3$
- E)
- $2^3I_3$



29.  $\sum_{n=0}^{\infty} \left(\frac{1}{2}\right)^n = ?$

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

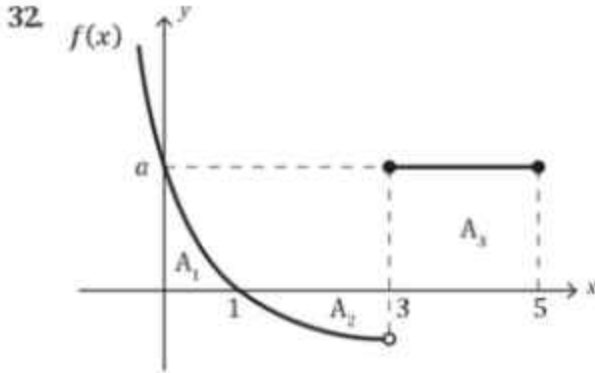


$[OA] // [CB]; \min(A(OABC)) = ?$

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

31.  $\left. \begin{array}{l} h(x) = (f \circ g)(-3x) \\ g(3) = g'(3) = 2 \\ f'(2) = 4 \end{array} \right\} \Rightarrow h'(-1) = ?$

- A) -24    B) -12    C) 8    D) 12    E) 24

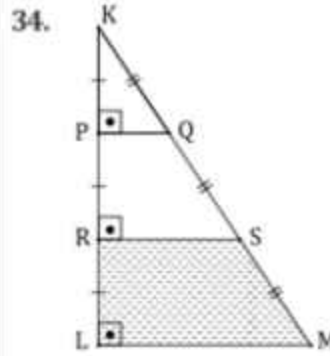
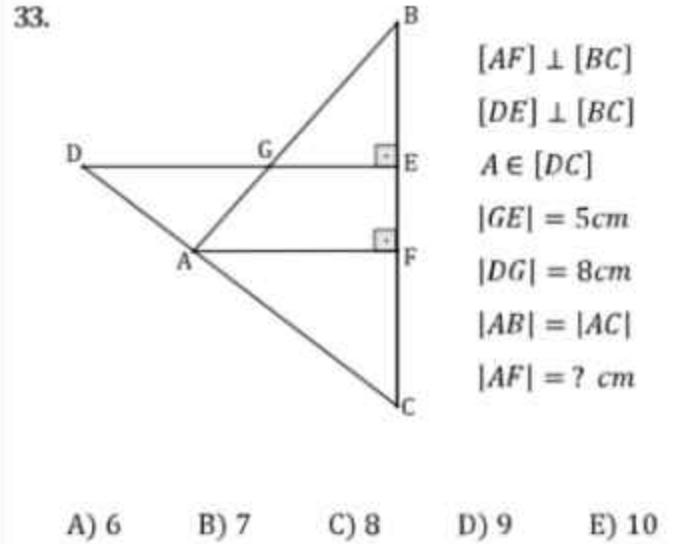


$$\frac{4A_1 - A_3}{2} = 2A_2$$

$$\int_0^5 f(x) = 10$$

$$a = ?$$

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



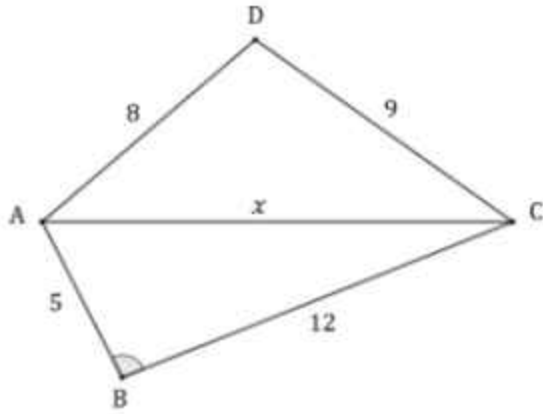
$$|KP| = |PR| = |RL|$$

$$|KQ| = |QS| = |SM|$$

$$A(KPQ) = 7 \text{ cm}^2 \Rightarrow A(RLMS) = ? \text{ cm}^2$$

- A) 21    B) 25    C) 32    D) 35    E) 42

35.

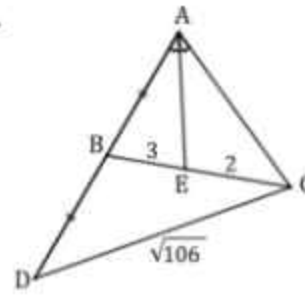


ABCD dörtgeninde  $x \in \mathbb{Z}^+$ ,  $m(\widehat{ABC}) > 90^\circ$  ise  $x$ 'in alabileceği farklı tamsayı değerleri toplamı kaçtır?

If  $x \in \mathbb{Z}^+$ ,  $m(\widehat{ABC}) > 90^\circ$  in the quadrilateral ABCD, what is the sum of the different integers  $x$  value could be?

- A) 58    B) 50    C) 45    D) 35    E) 34

36.



$$m(\widehat{BAE}) = m(\widehat{CAE})$$

$$|AB| = |BD|$$

$$|BE| = 3 \text{ cm}$$

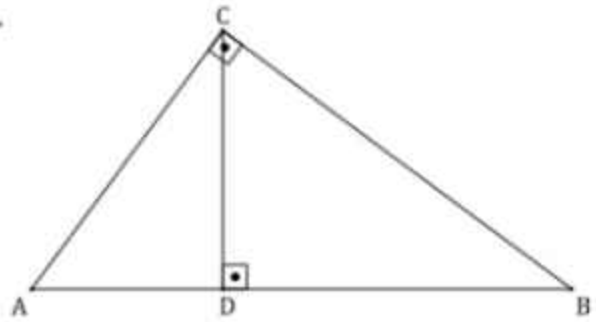
$$|EC| = 2 \text{ cm}$$

$$|DC| = \sqrt{106} \text{ cm}$$

$$|AE| = ? \text{ cm}$$

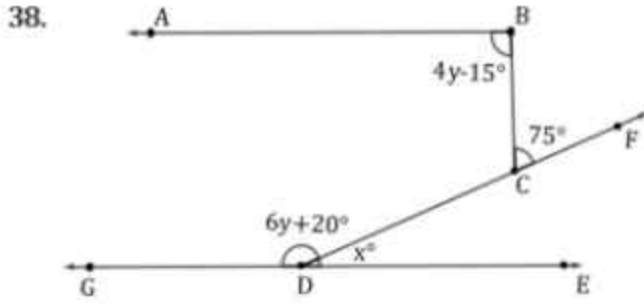
- A)  $2\sqrt{2}$     B) 3    C)  $3\sqrt{2}$     D) 4    E)  $4\sqrt{2}$

37.



$$|AC| = 6 \text{ cm}, |AB| = 10 \text{ cm} \Rightarrow |CD| = ? \text{ cm}$$

- A) 4    B) 4.8    C) 5.2    D) 7    E) 9



$[BA \parallel GE$

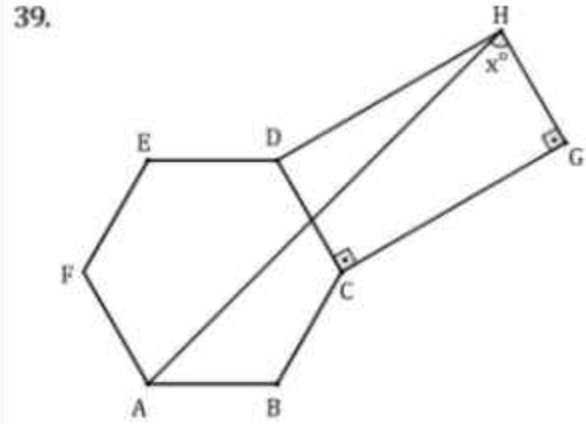
$C \in [DF$

$$m(\widehat{ABC}) = 4y - 15^\circ, \quad m(\widehat{GDF}) = 6y + 20^\circ$$

$$m(\widehat{BCF}) = 75^\circ$$

$$m(\widehat{FDE}) = x = ?$$

- A) 5    B) 10    C) 25    D) 30    E) 35



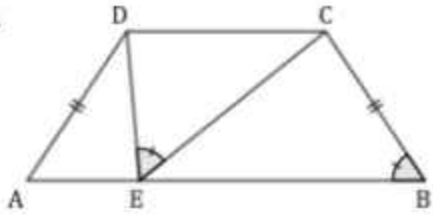
$$|AB| = |BC| = |CD| = |DE| = |EF| = |FA| = |GH|,$$

$$|CG| = |DH|, \quad 2|BC| = |CG|$$

$$x = ?$$

- A) 80    B) 75    C) 70    D) 65    E) 60

40.



$$[AB] \parallel [DC]$$

$$m(\widehat{DEC}) = m(\widehat{ABC})$$

$$|AD| = |BC|$$

$$|AE| = 2 \text{ cm}, |EB| = 12 \text{ cm}$$

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

- A)  $2\sqrt{6}$    B) 5   C)  $3\sqrt{3}$    D) 6   E)  $4\sqrt{3}$

41.

$$\begin{array}{r} AB \\ \times C5 \\ \hline BED \\ + EB6 \\ \hline EB8ED \end{array}$$

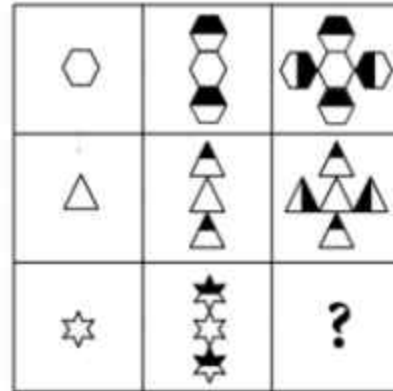
Yandaki çarpma işleminde hata yapılmıştır. Buna göre,






There has been an error in the multiplication given aside. According to this,

$$E^D + A.C + B = ?$$

- A) 12   B) 13   C) 14   D) 15   E) 16

42.

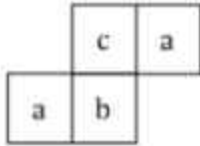


- A)    B)    C) 
- D)    E) 



43.

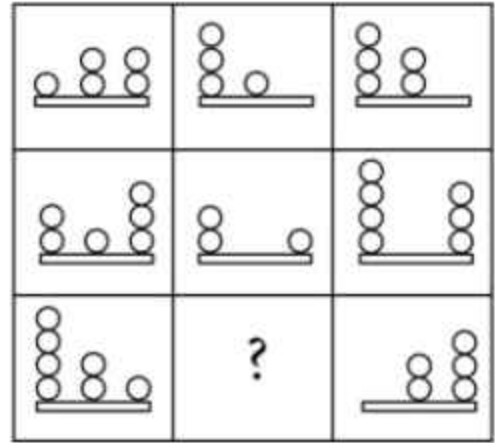
3	5	4	3	0	2	-2
1	2	5	-1	-1	9	4
4	9	-1	-1	3	3	2
-1	9	3	3	1	9	4
4	3	4	4	-1	2	4
1	4	2	0	3	2	9
6	-1	3	9	1	6	5



$(a \neq b \neq c)$   
 $a^c \cdot b + a = ?$

- A) 0    B) 6    C) 12    D) 24    E) 30

44.

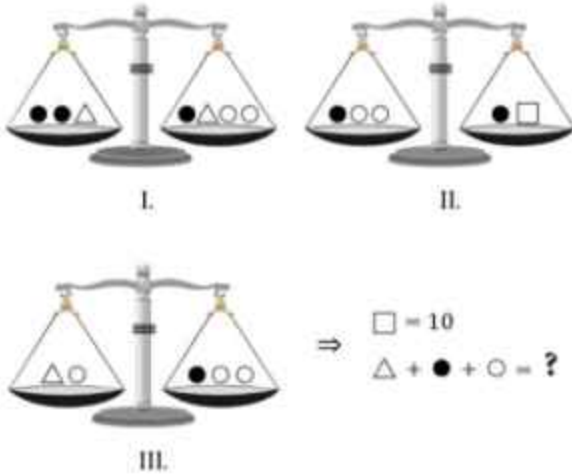


- A)    B)    C)
- D)    E)

45. 0, 2, 8, 24, 64, 160, X  $\Rightarrow$  X = ?

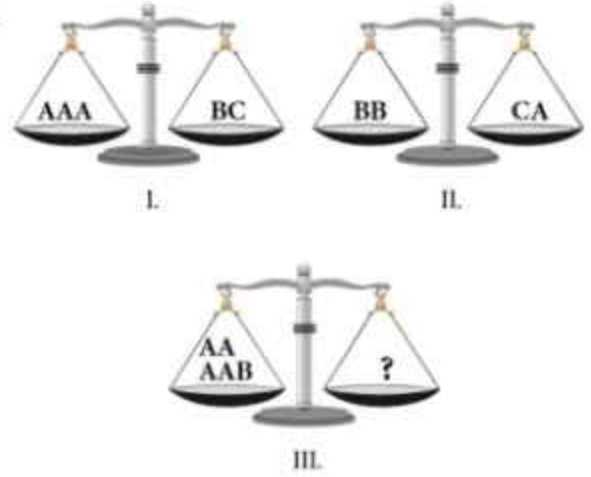
- A) 184 B) 196 C) 288 D) 384 E) 448

46.



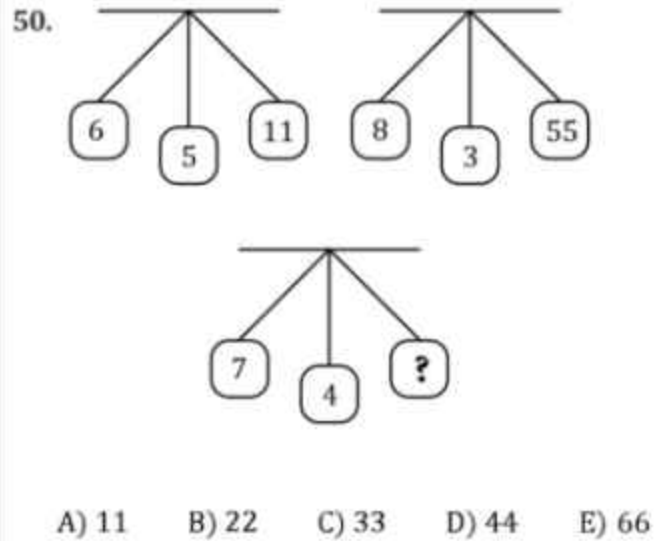
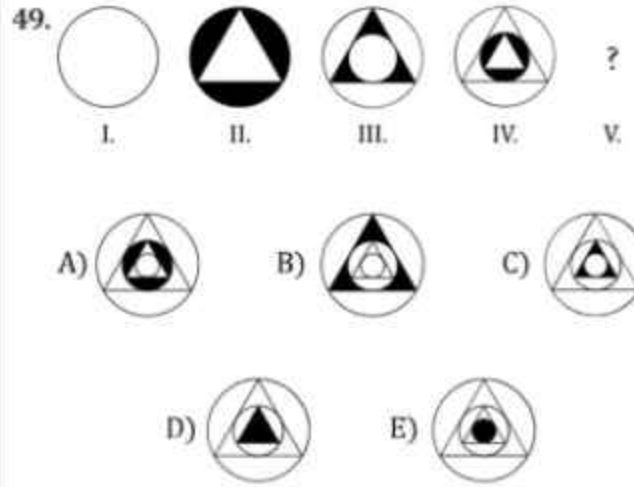
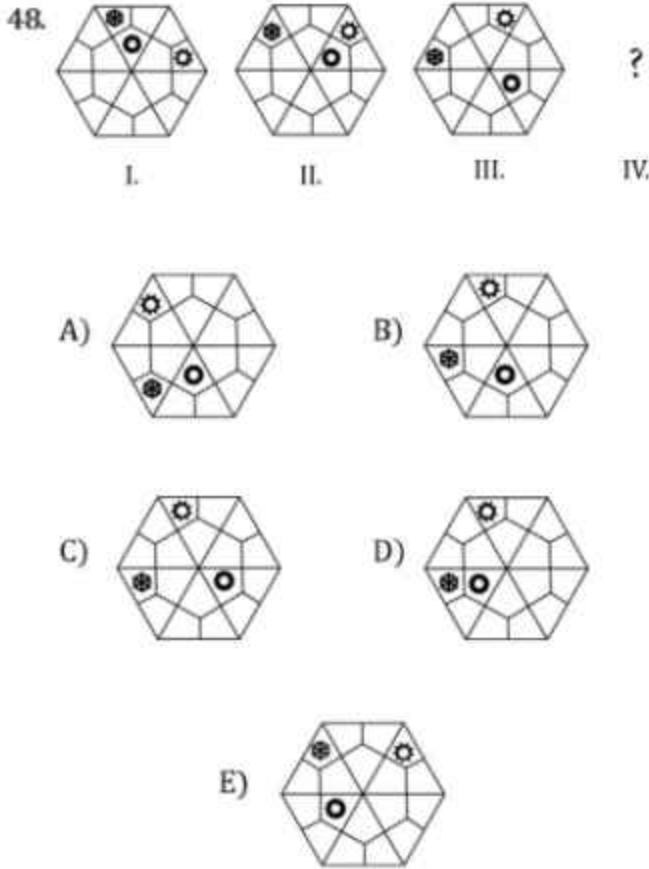
- A) 25 B) 30 C) 35 D) 40 E) 50

47.



- A) CCAA B) CCCA C) AAAC  
D) BBBA E) BBBC







51.  = 25

 = 9

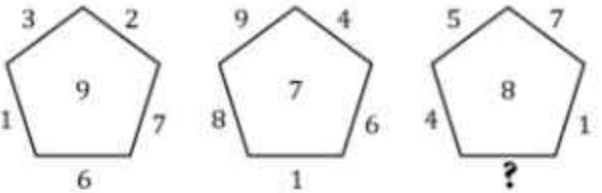
 = 20

 = ?

- A) 512 B) 201 C) 196 D) 36 E) 11




52. 




- A) 76 B) 77 C) 78 D) 79 E) 81




53. 



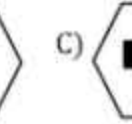
- A) 4 B) 5 C) 6 D) 7 E) 8


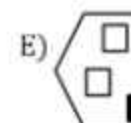
54.

I.  +  = 

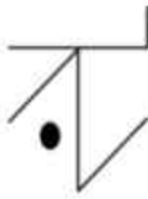
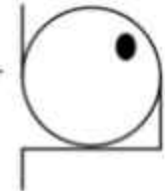
II.  +  = 


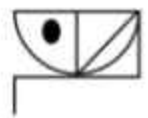
III.  +  = 



A)  B)  C) 

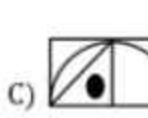
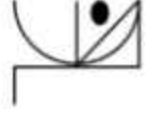
D)  E) 


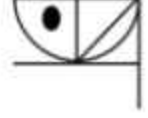
55.

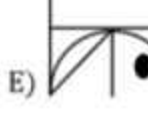

 +  = ..... + .....

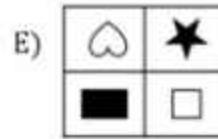
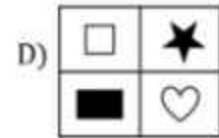
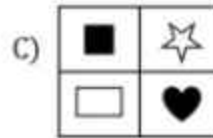
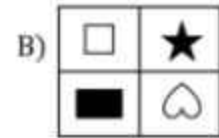
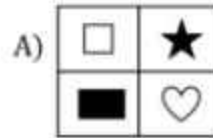
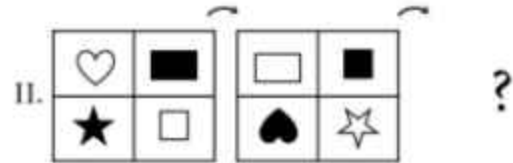
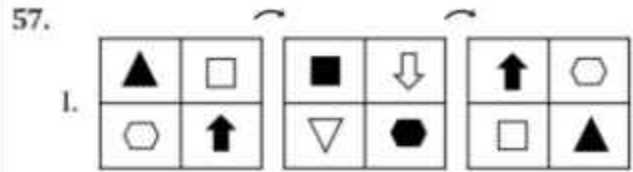
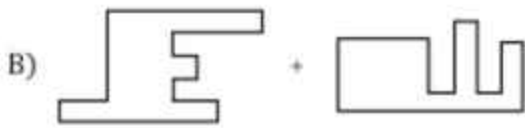
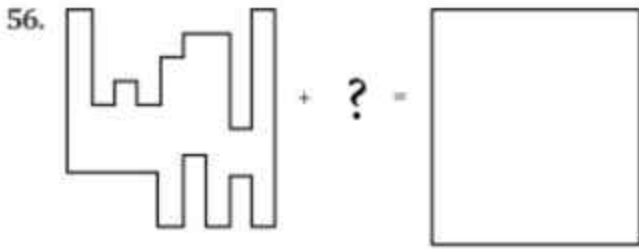
A)  + 

B)  + 

C)  + 

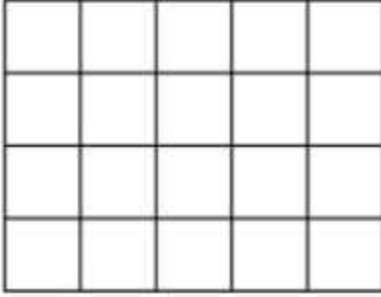
D)  + 

E)  + 





58.

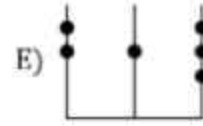
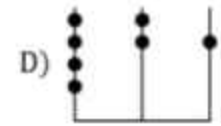
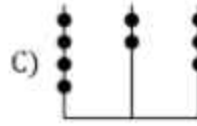
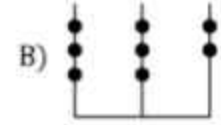
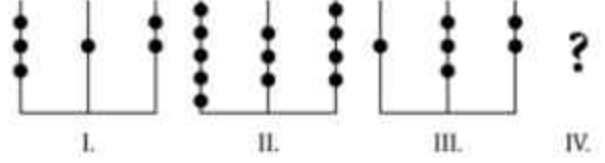


Verilen şekilde kaç dikdörtgen vardır?

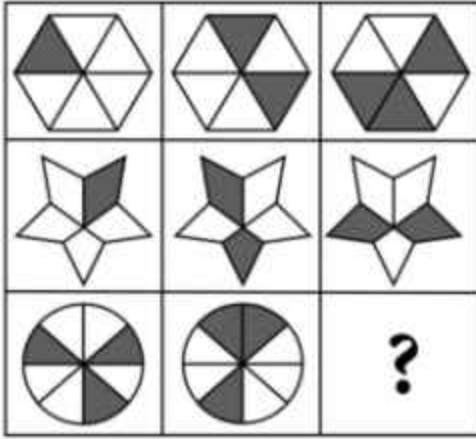
How many rectangles are there in the given figure?

- A) 20    B) 50    C) 70    D) 100    E) 150

59.

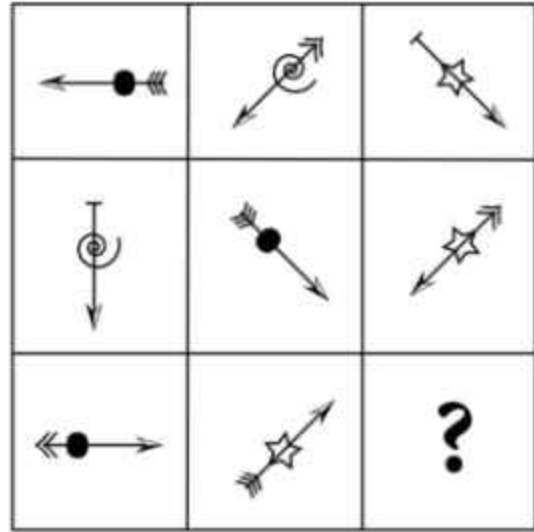


60.



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

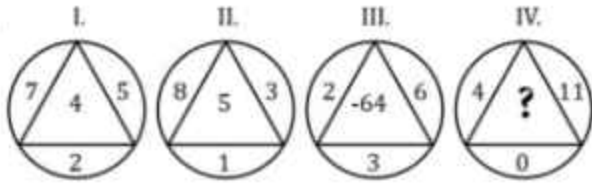
61.



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

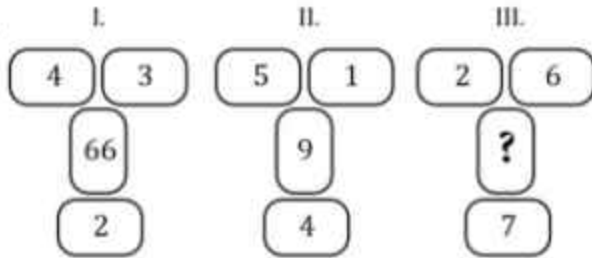


62.



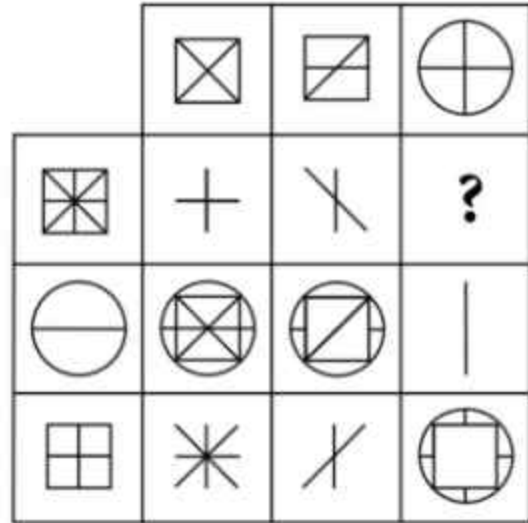
- A) -7    B) -1    C) 0    D) 1    E) 7

63.



- A) 19    B) 39    C) 44    D) 71    E) 135

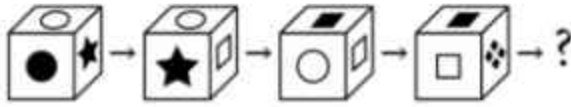
64.









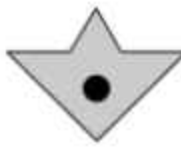



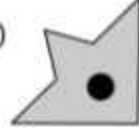
- A)
- B)
- C)
- D)
- E)

65. I.  $\left. \begin{array}{l} 23871 \\ 49765 \\ 83451 \\ 62597 \end{array} \right\} \left. \begin{array}{l} \text{II.} \\ 28147 \\ 39275 \\ 69315 \\ 46781 \end{array} \right\} \Rightarrow 12345 = ?$
- A) 52967      B) 56279      C) 56927  
D) 65972      E) 76952

66. Şekildeki küpte her yüz bir şekle karşılık gelmektedir.  
Each face of the cube in the given figure represents a shape.

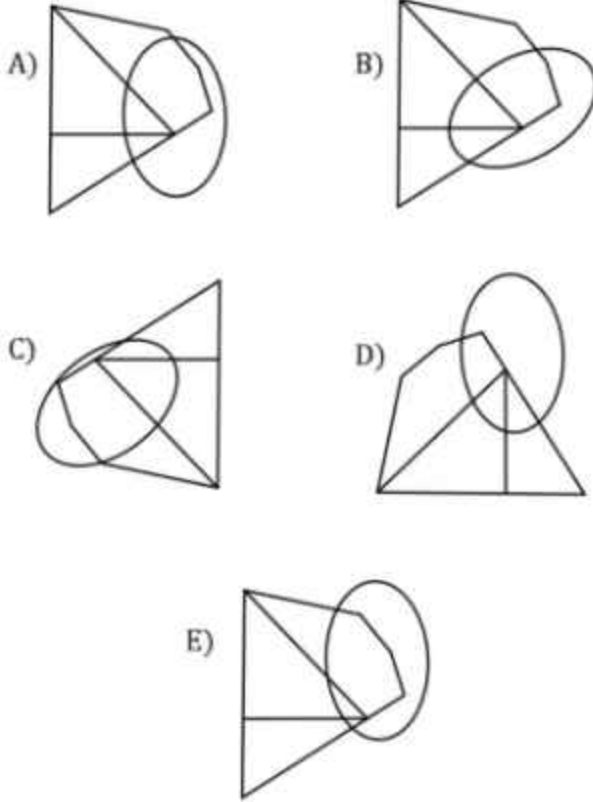
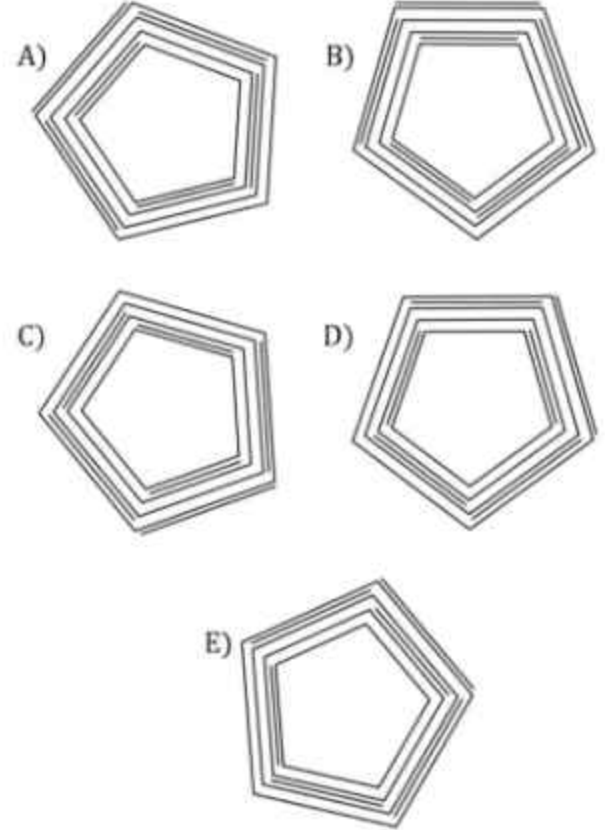


- A)       B)       C)   
D)       E) 

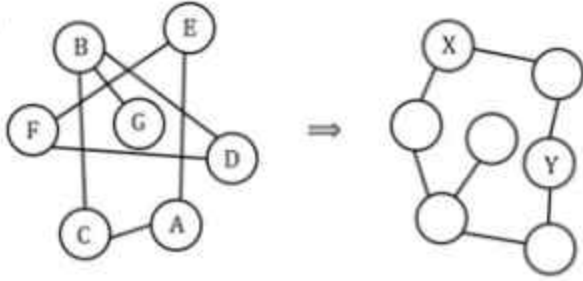
67. 
- A)       B)   
C)       D)   
E) 



68.

69. Aşağıdaki şekillerden hangisi **farklıdır**?Which of the following figure is **different** from others?

70.



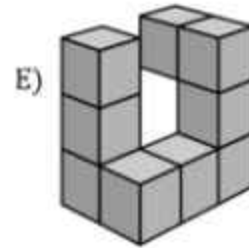
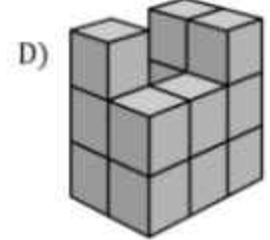
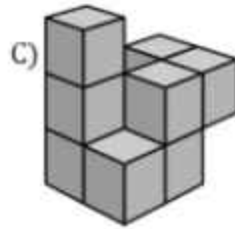
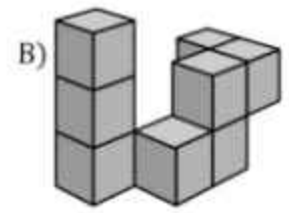
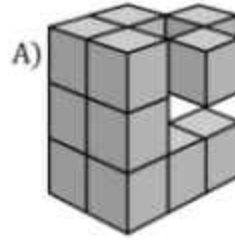
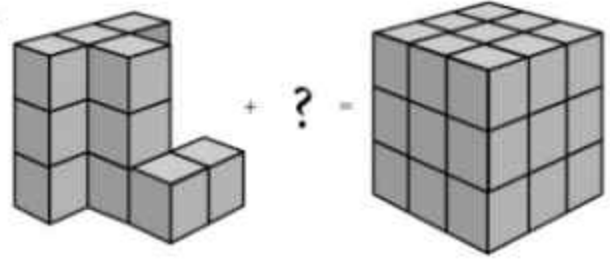
X = ?

Y = ?

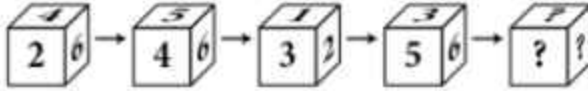
X Y






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

71.



72. Şekildeki küpün yüzleri numaralandırılmıştır.  
Each face of the cube in the given figure is numbered.



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

73.

x	a	b	c
a			9b
b	16c		a <sup>2</sup>
c			

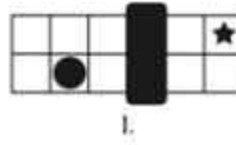
$$a, b, c \in \mathbb{R}^+$$

$$a \times b = a \cdot b$$

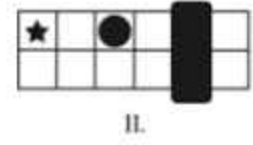
$$\frac{b^2 + c^2}{a} = ?$$

- A) 20 B) 25 C) 30 D) 38 E) 40

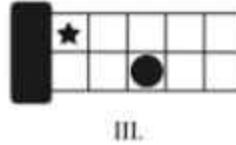
74.



I.



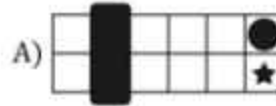
II.



III.

?

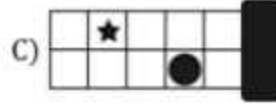
IV.



A)



B)



C)



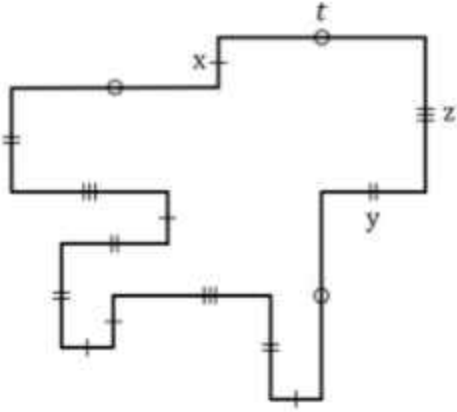
D)



E)



75.



$$x = \frac{y}{2} = \frac{z}{3} = \frac{t}{4}$$

Çevre (Perimeter) = 108 cm

$$x + y + z + t = ? \text{ cm}$$

- A) 30    B) 31    C) 32    D) 33    E) 34

76.

1		4		
		x		
		y		4
3				
			5	

Yukarıda verilen jigsaw sudokuya göre

According to the jigsaw sudoku given above,

$$x \cdot y = ?$$

- A) 2    B) 5    C) 6    D) 10    E) 12

77.



I.

II.



III.

A) ●●●

B) ●●●●

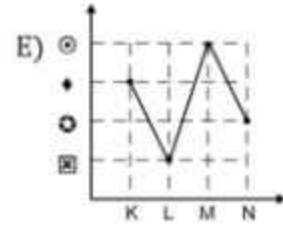
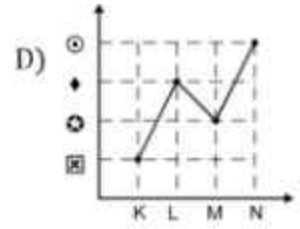
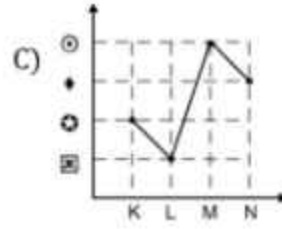
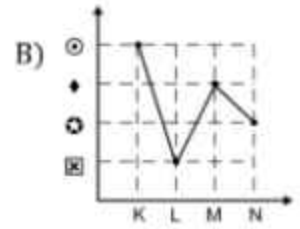
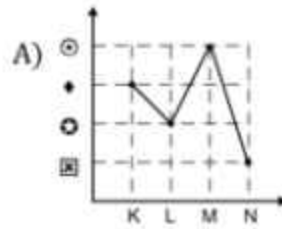
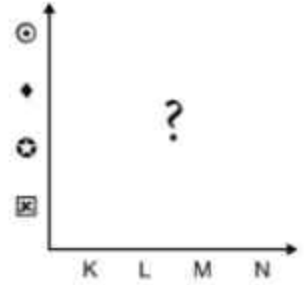
C) ■●●

D) ■●●

E) ●●●

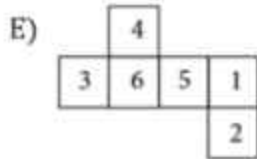
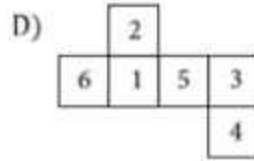
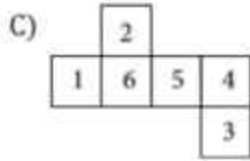
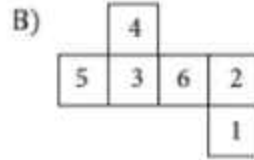
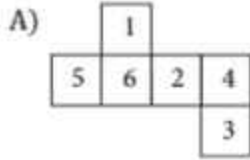
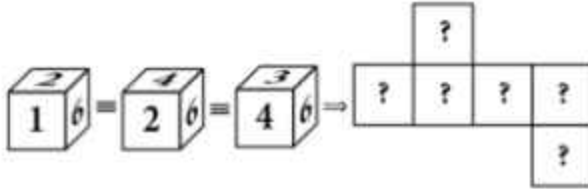
78.

	K	L	M	N
⊙			✓	
●	✓			
⊗				✓
⊠		✓		

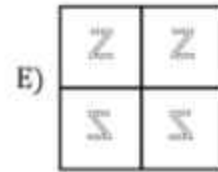
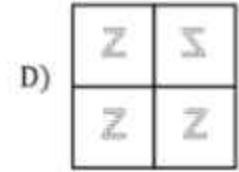
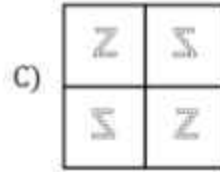
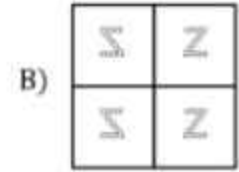
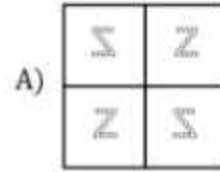
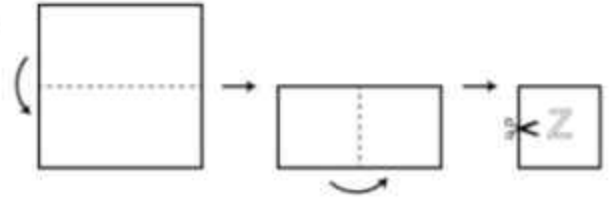


79. Şekildeki küpün yüzleri numaralandırılmıştır.

Each face of the cube in the given figure is numbered.



80.





### SINAVDA UYGULANACAK KURALLAR

1. **Cep telefonu ile sınava girmek kesinlikle yasaktır.** Çağrı cihazı, telsiz, vb. haberleşme araçları ile cep bilgisayar, saat fonksiyonu dışında fonksiyonu bulunan saat vb. her türlü bilgisayar özelliği bulunan cihazlarla ve ayrıca silah vb. teçhizatla, müsvedde kâğıdı, defter, kitap, sözlük, sözlük işlevi olan elektronik aygıt, hesap makinesi, hesap cetveli, pergel, açölçer, cetvel vb. araçlarla da sınava girmek yasaktır. Bu araçlarla sınava girmiş adayların yabancı uyruk numaraları mutlaka Salon Sınav Tutanağına yazılacak, bu adayların sınavları geçersiz sayılacaktır.
2. **Bu sınavda verilen cevaplama süresi 135 dakikadır.**
3. Sınav evrakını teslim ederek salonu terk eden aday, her ne sebeple olursa olsun tekrar sınava alınmayacaktır.
4. Sınav sırasında herhangi bir nedenle dışarı çıkmak yasaktır. Sınavın başlamasını izleyen ilk 30 dakika ve sınav süresinin son 15 dakikası içinde, sınavlarını tamamlasalar bile hiçbir adayın salondan çıkmasına izin verilmeyecektir. Sınavın başlamasını izleyen ilk 30 dakikadan sonra hiçbir aday sınava alınmaz.
5. Sınav süresince görevlilerle konuşmak ve onlara soru sormak yasaktır. Aynı şekilde görevlilerin de adaylarla yakından ve alçak sesle konuşmaları; ayrıca, adayların birbirinden kalem, silgi vb. şeyleri istemeleri kesinlikle yasaktır.
6. Sınav sırasında görevlilerin her türlü uyarılarına uymak zorundasınız. Gerekğinde görevliler oturduğunuz yerleri de değiştirebilir. Sınavınızın geçerli sayılması, her şeyden önce sınav kurallarına uymanıza bağlıdır. Kurallara aykırı davranışta bulunur ve yapılacak uyarılara uymazsanız kimliğiniz tutanağa yazılacak ve sınavınız geçersiz sayılacaktır.
7. Sınav sırasında kopya çekmek, kopya vermek veya kopya girişiminde bulunmak kesinlikle yasaktır. Kopya çeken veya verilmesini sağlayan kişiler hakkında tutanak tutularak bu kişilerin sınavı geçersiz sayılacaktır. Ayrıca her türlü kopya durumuna karışan kişiler hakkında disiplin soruşturması açılacaktır. Sınavda bulunan görevlilerin kopya girişiminde bulunanları uyarma zorunluluğu bulunmamaktadır. Sınav görevlileri bir salondaki sınavın, kurallara uygun biçimde yapılmadığını, toplu kopya girişiminde bulunulduğunu raporlarında bildirdikleri takdirde, İstanbul Üniversitesi - Cerrahpaşa takdir hakkını kullanarak bu salonda sınava giren tüm öğrencilerin sınavını geçersiz sayabilir.
8. Cevap kâğıdında ilgili alanları doldurmanız gerekmektedir. Cevap kâğıdına yazılacak her türlü yazıda ve yapılacak bütün işaretlemelerde kurşun kalem kullanılacaktır. Tükenmez kalem ve dolma kalem kesinlikle kullanılmayacaktır. Cevapların cevap kâğıdına işaretlenmiş olması gerekir. Soru kitapçığına işaretlenen cevaplar geçerli değildir.
9. Soru kitapçığınızı alır almaz, sayfaların eksik olup olmadığını, kitapçıkta basım hatalarının bulunup bulunmadığını kontrol ediniz. Soru kitapçığının sayfası eksik veya basımı hatalı ise değiştirilmesi için derhâl Salon Başkanına başvurunuz. Soru kitapçığında her sayfanın tepesinde basılı bulunan soru kitapçığı türünün, kitapçığın ön kapağında basılı soru kitapçığı türüyle aynı olup olmadığını kontrol ediniz. Farklı olması durumunda Salon Başkanından yeni bir soru kitapçığı isteyiniz. Soru kitapçığının türünün değişik olduğunu daha sonra fark ederseniz, size o zamana kadar cevaplama yaptığımız türden, hatasız bir soru kitapçığı verilmesi için Salon Başkanına başvurunuz. Cevap kâğıdınıza, size verilecek olan soru kitapçığının türünü işaretlemeyi unutmayınız. Bu işaret konmamışsa sınavınız değerlendirilmesine olanak bulunmadığından sınavınız geçersiz sayılacaktır.
10. Cevaplamaya geçmeden önce size verilecek soru kitapçığının üzerinde ayrılan yere adınızı, soyadınızı, yabancı uyruklu numaranızı ve bu salonun Salon Numarasını yazınız. Sınav sonunda soru kitapçıkları toplanacak ve tek tek incelenecektir. Soru kitapçığının bir tek sayfası bile eksik çıkarsa sınavınız geçersiz sayılacaktır.
11. **Soru kitapçığının türünü mutlaka cevap kâğıdında ilgili alana işaretleyiniz.** Aksi takdirde sınavınız değerlendirilemeyecektir. Cevap kâğıdına yapılacak bütün işaretlemelerde sadece yumuşak uçlu kurşun kalem kullanınız. Tükenmez veya dolma kalemle kesinlikle işaretleme yapmayınız.
12. Sınav başlama ve bitiş saatleri Salon Görevlileri tarafından duyurulacaktır. Salon görevlilerinin süreye ilgili ikazlarına uymanız gerekmektedir. Sınav süresi sona erdiğinde soru kitapçığına ve cevap kâğıdına kesinlikle işaretleme yapmayınız. Süre dolduğu halde işaretleme yapan kişiler hakkında tutanak tutulacak olup bu kişilerin sınavları geçersiz sayılacaktır.
13. Soru kitapçığının sayfalarındaki boş yerleri müsvedde için kullanabilirsiniz.
14. Sınav esnasında soru kitapçığı ve cevap kâğıdı dışında herhangi bir materyalin sıra üzerinde, altında veya oturulan koltuklarda bulundurulması kesinlikle yasaktır. Soruların ve cevapların not edilerek dışarı çıkarılması yasaktır.
15. Sınav sırasında, görevliler dahil, kimse sigara, pipo, puro vb. şeyleri içmeyecektir.
16. Soruları ve bu sorulara verdiğiniz cevapları ayrı bir kâğıda yazıp bu kâğıdı dışarı çıkarmanız kesinlikle yasaktır.
17. Sınav salonundan ayrılmadan önce, soru kitapçığınızı, cevap kâğıdınızı salon görevlilerine teslim etmeyi unutmayınız.



## RULES FOR THE CONDUCT OF THE EXAMINATION

1. **No materials or electronic devices shall be brought into the room or used during the examination.** Unauthorized materials include, but are not limited to: books, dictionaries, class notes, or aid sheets, weapons, explosive materials. Unauthorized electronic devices include, but are not limited to: cellular (mobile) telephones, laptop computers, calculators, MP3 players (such as an Ipad), Personal Digital Assistants ("PDA" such as a Palm Pilot or Blackberry), pagers, electronic dictionaries, Compact Disc Players, Mini Disc Players, Smart Watches and Smart Glasses. Anyone who violates these rules will be penalized by invalidating their exam results.
2. **İÜCYÖS Exam duration: 135 minutes.**
3. No candidate who has submitted their exam documents to those supervising the examination and have left the test room, for any reason whatsoever, will be allowed to re-enter the room.
4. Candidates will NOT be permitted to enter an examination room later than the first thirty (30) minutes after the commencement of the examination, nor to leave until at least half an hour after the examination has commenced. Candidates shall remain seated at their desks during the final fifteen (15) minutes of the examination. Students who arrive following the first 30 minutes after the examination has started will NOT be allowed in the test rooms.
5. Candidates shall not communicate with one another in any manner whatsoever during the examination. During the test, it is forbidden to ask questions or talk to those supervising the exam. It is also against the rules of the examination for supervisors to converse or whisper to any candidates. Similarly, it is forbidden to ask another candidate for a pencil, eraser, or anything else.
6. During the examination, candidates are required to comply with all the directions given to them by the supervisors; they also have the authority to assign seats to candidates. You must follow all instructions given to you. Otherwise, your name and application number will be taken, and your examination will be invalidated.
7. It is strictly forbidden to cheat, attempt to cheat, or assist other students to cheat in the examination. Any act or attempt of cheating for those who do or assist to do so will be officially reported and result in the invalidation of the examinations for associated students. Furthermore, those involved in any act or attempt of cheating will be subject to disciplinary proceedings. Proctors do not have to warn those who cheat, attempt to cheat or assist others to do so. If proctors report failure to comply with the examination rules and engagement in mass cheating, Istanbul University - Cerrahpaşa holds the right to declare all the examinations in the associated examination room invalid.
8. It is important to fill in the necessary areas on the answer sheet. You must use only a soft lead pencil for writing your name and other information or marking answers. No type of pen may be used. Mark your answers only on the answer sheet. For each question mark one letter (A, B, C, D, or E) on your answer sheet. Answers marked only in the booklets will be ignored.
9. Do not open the booklet until you are told to do so. After permission is granted you should check throughout your booklet and make sure that no pages are missing and all pages are readable. You should inform the supervisors immediately in such an event so that your test booklet can be changed. Check whether the letter printed at the top of each page in the booklet is the same as the letter printed on the cover. If you realize such a disparity later in the exam, you should ask the supervisors in charge for a new booklet that matches with the type you have been working on up to that time. Remember to mark the type of the booklet on your answer sheet; otherwise, your exam will be invalid, since it will not be possible to evaluate it.
10. Before you begin to answer the questions, you must write your name, surname, candidate number, and examination hall number on the cover of your booklet. Following the examination, all booklets are collected and inspected. If even one page of a booklet is missing, the answer sheet will not be considered for evaluation.
11. Make sure to **mark the booklet group** under the specified field on the answer sheet. Otherwise, your examination **cannot be evaluated**. For all markings on the answer sheet, use only a **soft lead black pencil**. Do not use any other pens; a ball-point pen or an ink pen.
12. Proctors will announce the beginning and end time of the examination. You must follow proctors' notices regarding timing. Immediately stop any marking on the booklet and the answer sheet when time is called at the end of the examination. Students who continue marking after time is called for the examination will be officially reported and their examinations will be declared invalid.
13. You may use the blank spaces on the pages of the booklet as scrap paper for writing or calculating purposes.
14. It is strictly forbidden to leave any materials, other than the booklet and the answer sheet, on or under the desks or student seats. It is forbidden to note down the questions and answers and take them out of the examination room.
15. No one, including the supervisors in charge, is allowed to smoke a cigarette, or any other tobacco products during the examination.
16. It is strictly forbidden to make a record of your answers on any paper and take it out.
17. At the end of the examination, hand in both the booklet and the answer sheet. Booklets and other material issued for the examination shall not be removed from the examination room.



**İÜCYÖS 2021**  
**YURTDIINDAN VEYA YABANCI UYRUKLUÖGRENCİ SINAVI**  
**C KİTAPÇIĞI YANIT ANAHTARI**

Soru No	Doğru Yanıt	Soru No	Doğru Yanıt
1	E	41	D
2	B	42	D
3	E	43	C
4	C	44	C
5	D	45	D
6	C	46	B
7	D	47	A
8	D	48	B
9	C	49	C
10	C	50	C
11	A	51	A
12	C	52	D
13	A	53	E
14	A	54	D
15	D	55	B
16	A	56	A
17	D	57	A
18	A	58	E
19	D	59	C
20	C	60	E
21	A	61	A
22	E	62	D
23	B	63	D
24	B	64	E
25	C	65	C
26	D	66	A
27	E	67	D
28	E	68	B
29	E	69	E
30	D	70	A
31	A	71	D
32	D	72	C
33	D	73	B
34	D	74	B
35	C	75	A
36	C	76	D
37	B	77	A
38	B	78	E
39	B	79	B
40	A	80	C

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همراه شما  
در مسیر یوس

حل تشریحی یوس ۲۰۲۰

دانشگاه جراح پاشا



Istanbul University Cerrahpasa

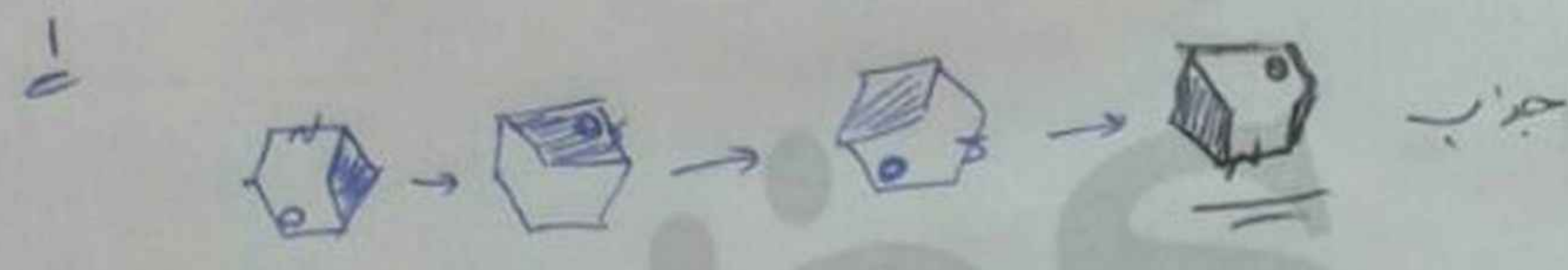
INTERNATIONAL STUDENTS' EXAM



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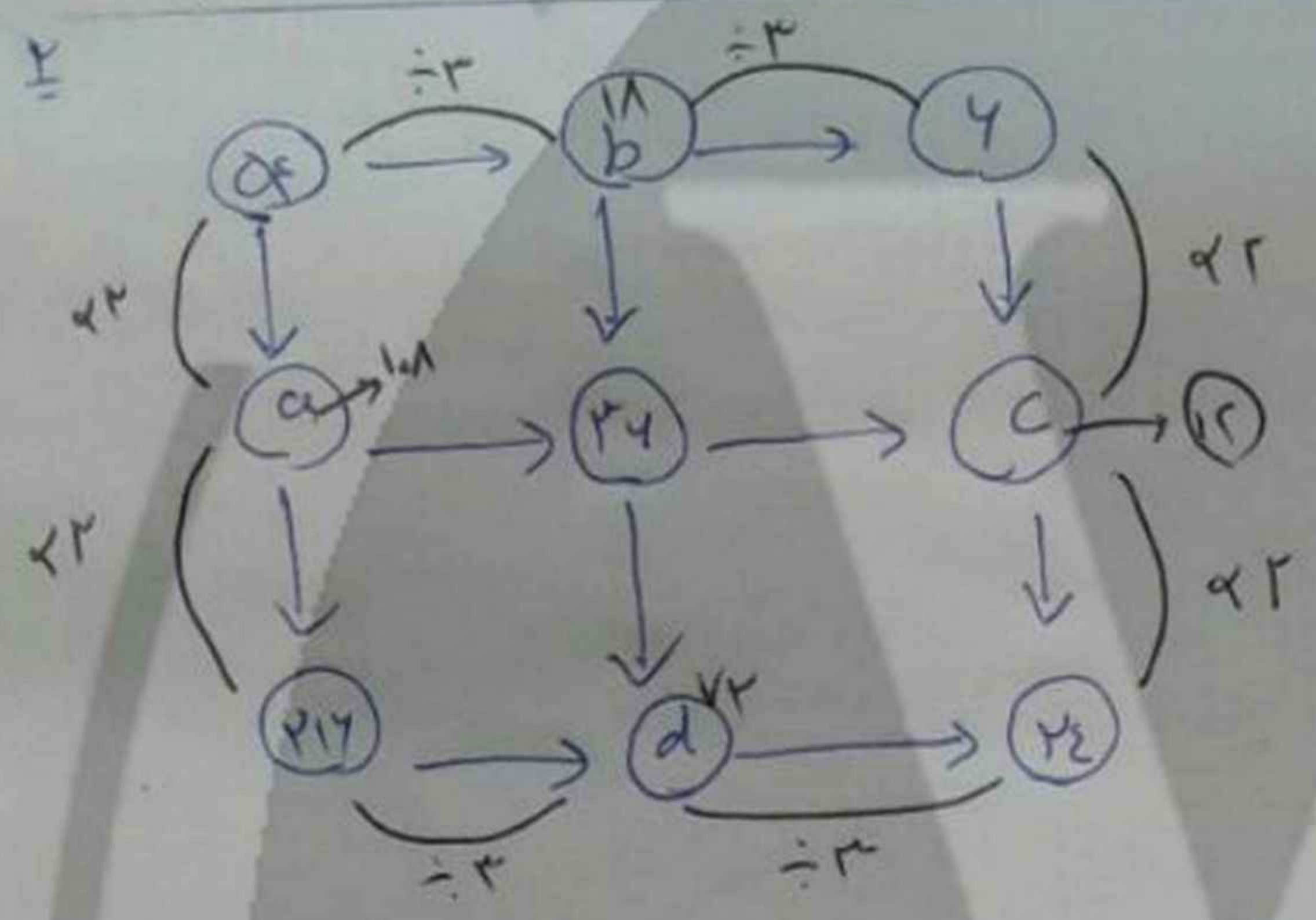
☎ ۰۲۱۹۱۳۰۵۹۰۵

✈️ @uniland\_yos



یک فلز ببلند  $\rightarrow$   $n$   
 حرکت  
 در جهت عقربه های ساعت  
 در جهت عقربه های ساعت  
 در جهت عقربه های ساعت  
 در جهت عقربه های ساعت  
 در جهت عقربه های ساعت

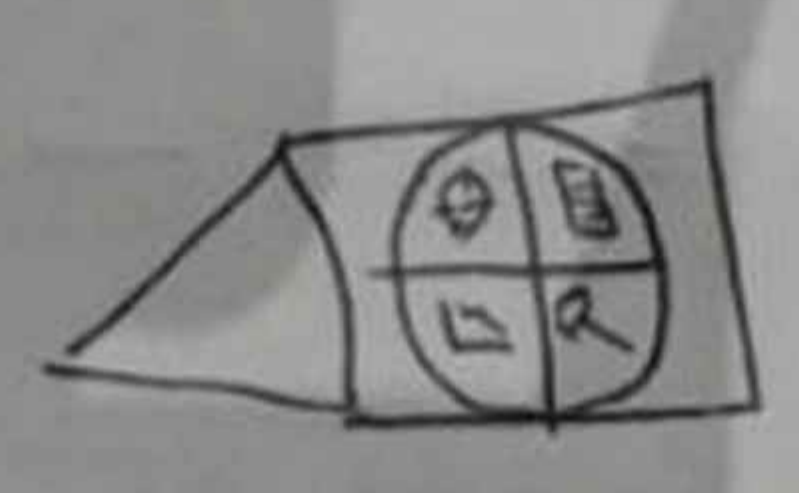
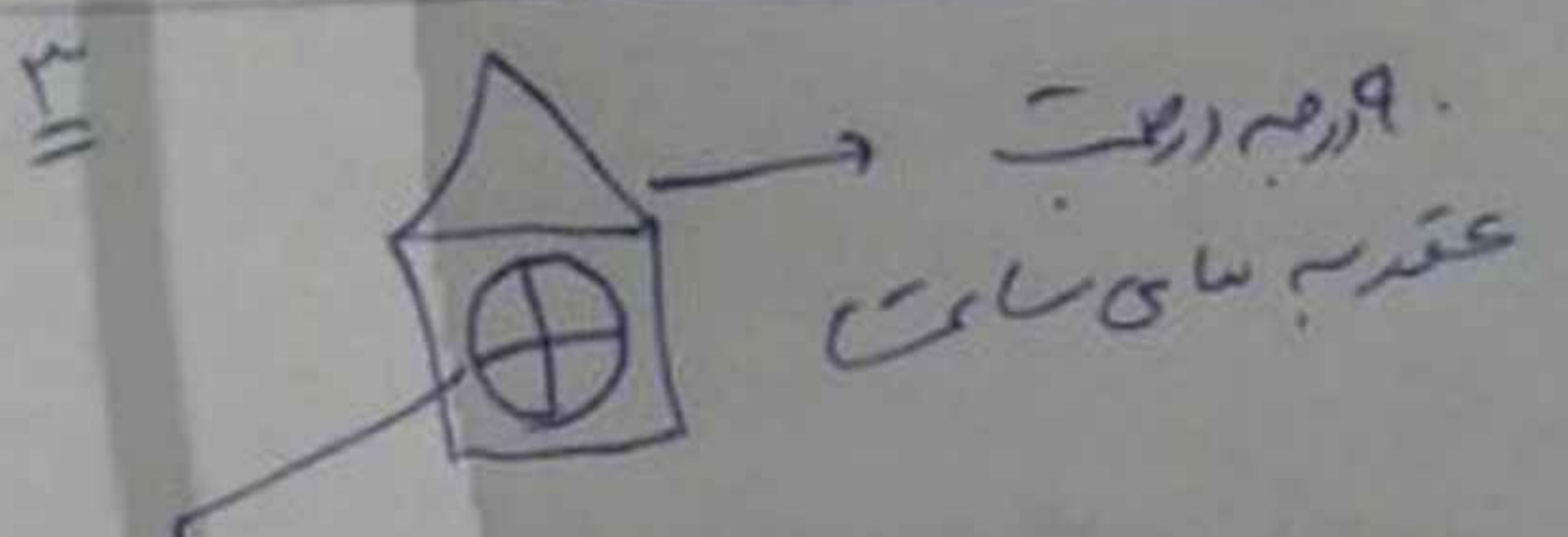
سوال ۱



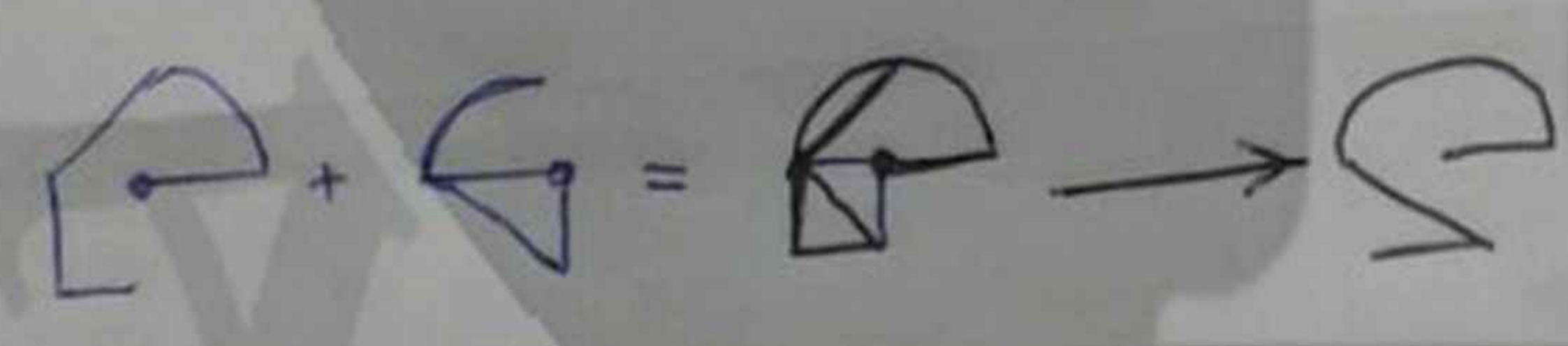
$a - b + c - d = ?$

$108 - 18 + 4 - 72 = 30$

سوال ۲



سوال ۳

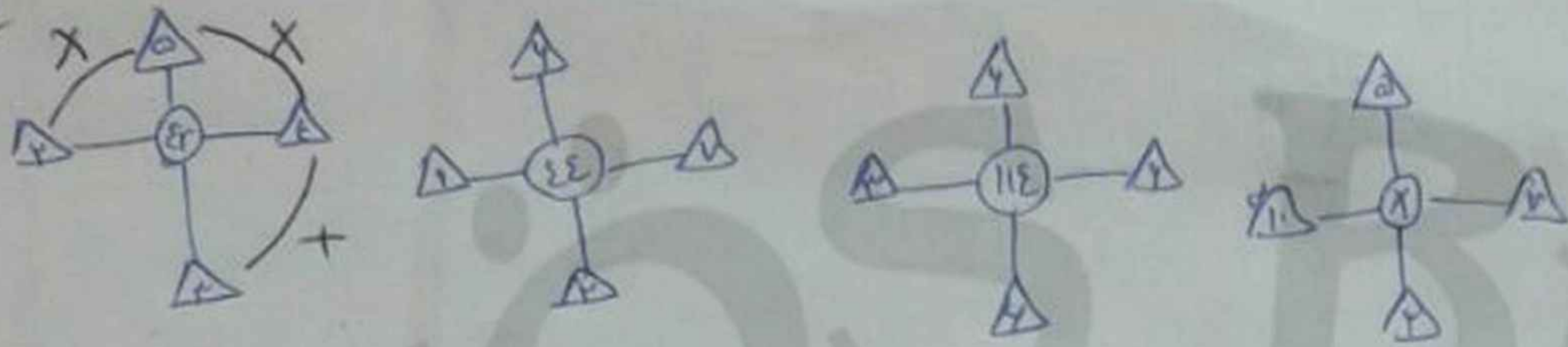


سوال ۴

جمع است

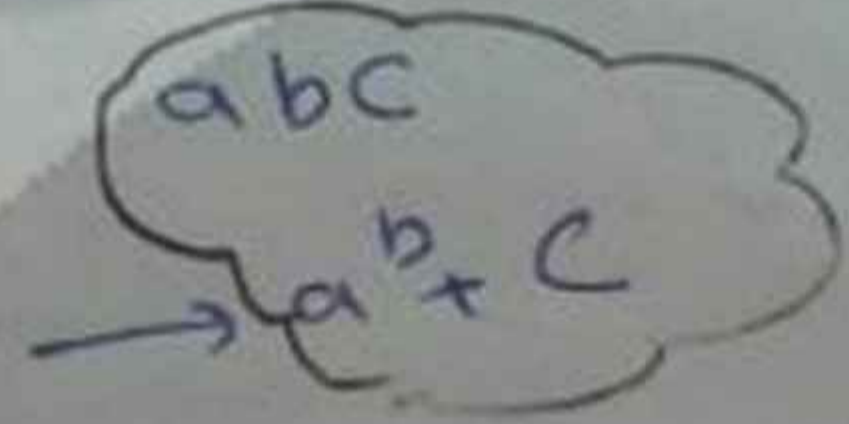


$\rightarrow$   $D$   $\rightarrow$   $D$



$$1 \cdot x \cdot 2 \cdot x \cdot v + r \rightarrow \underline{\underline{25r}}$$

- 123 → E
- 234 → 12
- 345 → 14
- 456 → X

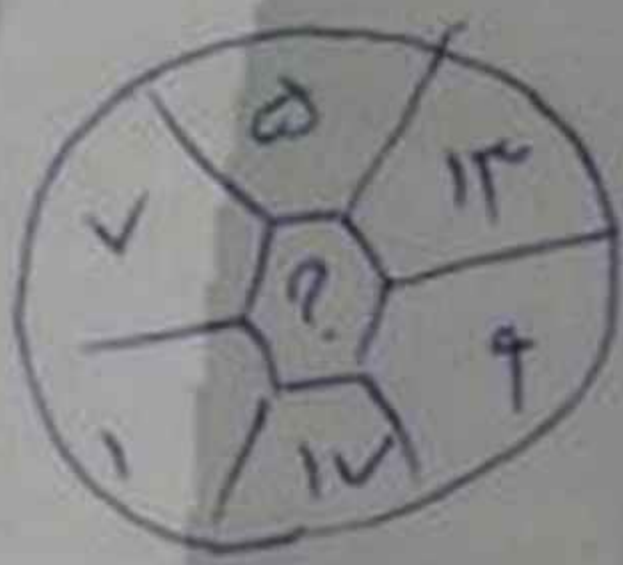


$$\rightarrow E^2 + 4 \rightarrow \underline{\underline{22}}$$



سوم عدد در هر دو = مجموع عدد

$$\frac{\quad}{2} = \quad$$



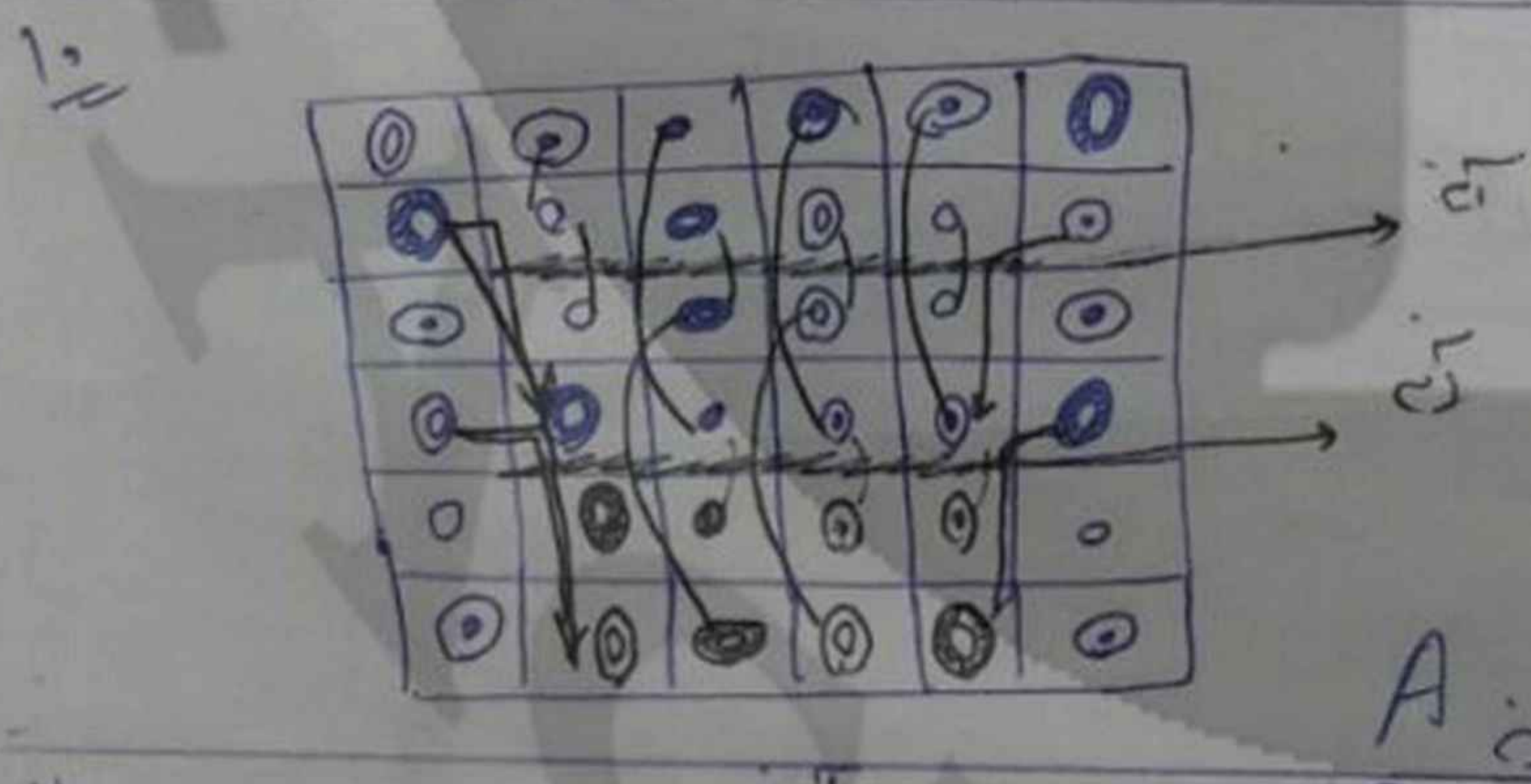
$$\rightarrow \frac{6 + 12 + 18 + 24 + 30 + 36}{2} = \underline{\underline{24}}$$

$$9 \rightarrow \triangle 2 \rightarrow \text{house } 4 \rightarrow 4 \times 9 - 2 \times 2 = 32$$

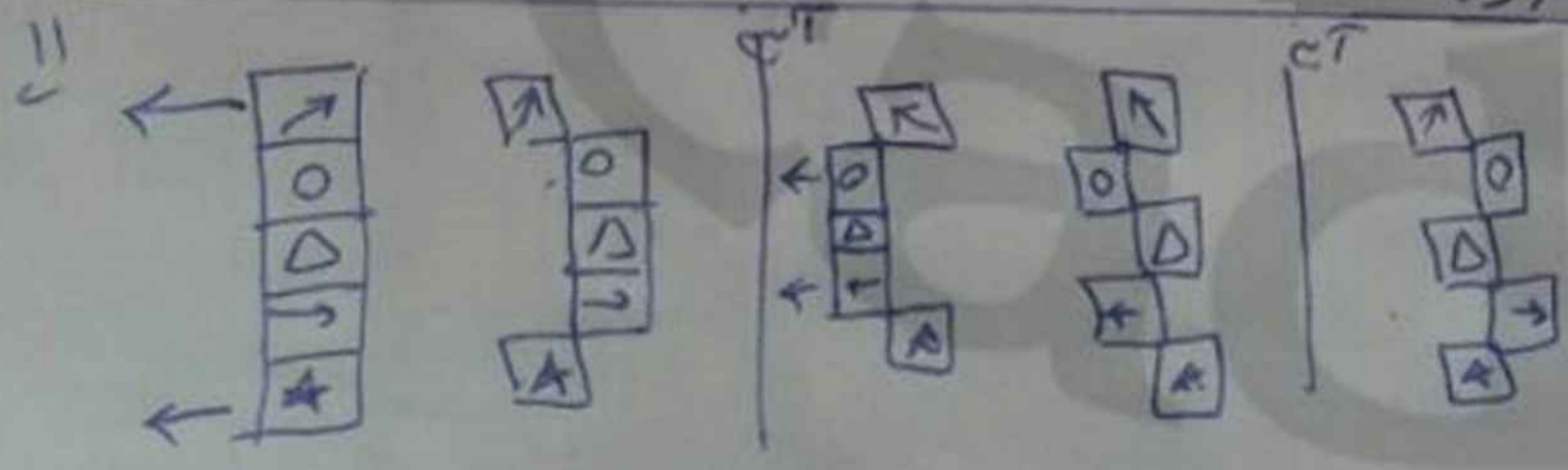
$$14 \rightarrow \triangle 1 \rightarrow \text{house } 1$$

$$11 \rightarrow \triangle 3 \rightarrow \text{house } 2 \rightarrow 11 \times 3 - 3 \times 3 = 24 \rightarrow 22 - 9 = 13$$

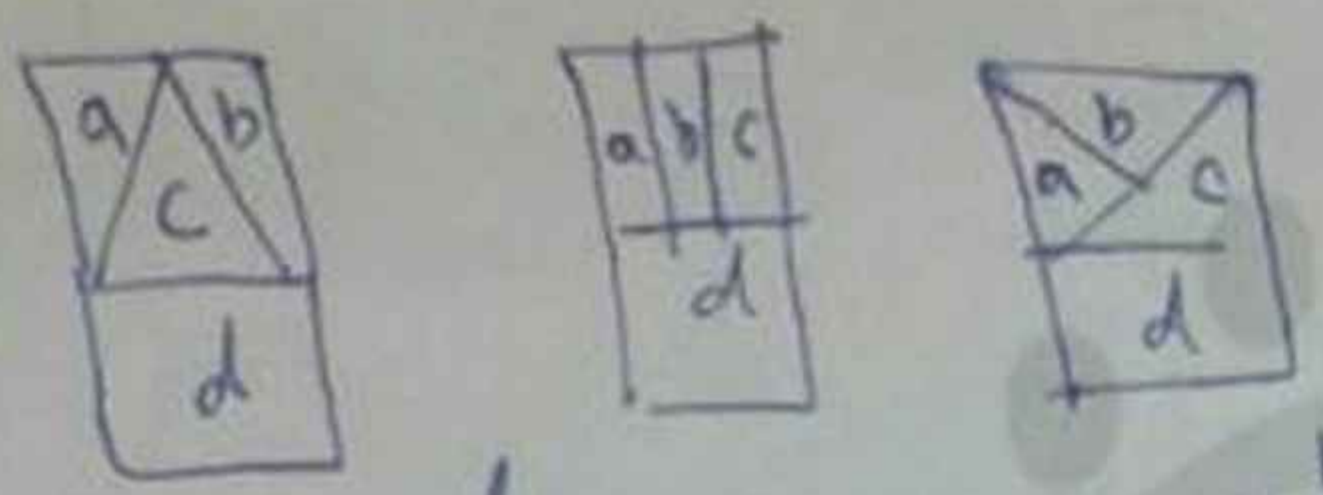
$$\underline{\underline{2 = v}}$$



A, B, C



A, B, C



$$a \times b - c = d \quad \frac{a}{c} + b = d \quad a^b \times e = d$$

$$A = \frac{1}{x} - 4 \Rightarrow 11$$

$$B = \frac{4}{v} + 1 \Rightarrow 4 \quad 11 - (11 + 4) = \textcircled{-4}$$

$$C = \sum x \Rightarrow 11$$

$$b - ac = 3$$

$$39 - 11x = 3 \quad \underline{x = 4}$$



A circle

● = x     x + 2y = 11k     x + z = 8

▲ = y     x + k + z = 17y

△ = z     z + y = 9k

$$x + 2y = 11k$$

$$-x - k - z = -17y \rightarrow 16y - k - z = 11k \rightarrow 4y = 11k \quad \boxed{y = 3k}$$

$$z + y = 9k$$

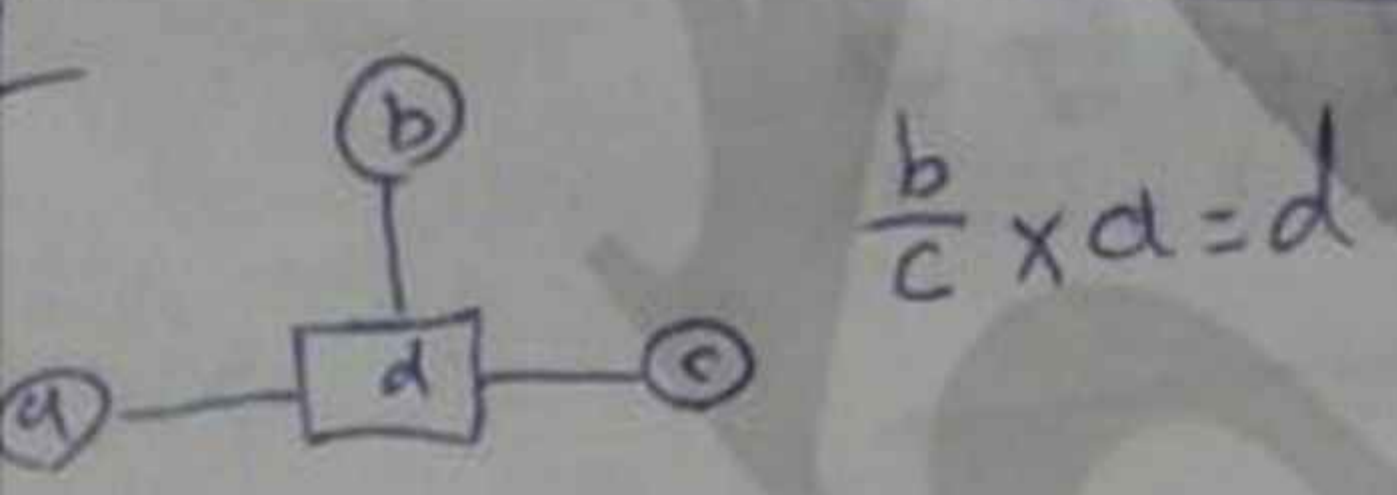
$$\rightarrow z + 3k = 9k \rightarrow \boxed{z = 6k}$$

$$\rightarrow x + k + 6k = 9k \quad \boxed{x = 2k}$$

$$x + z = ? \rightarrow 2k + 6k = \textcircled{8k}$$

$$6 \text{ circle} \rightarrow 2y + 2k \rightarrow \underline{11k} \rightarrow$$

E circle

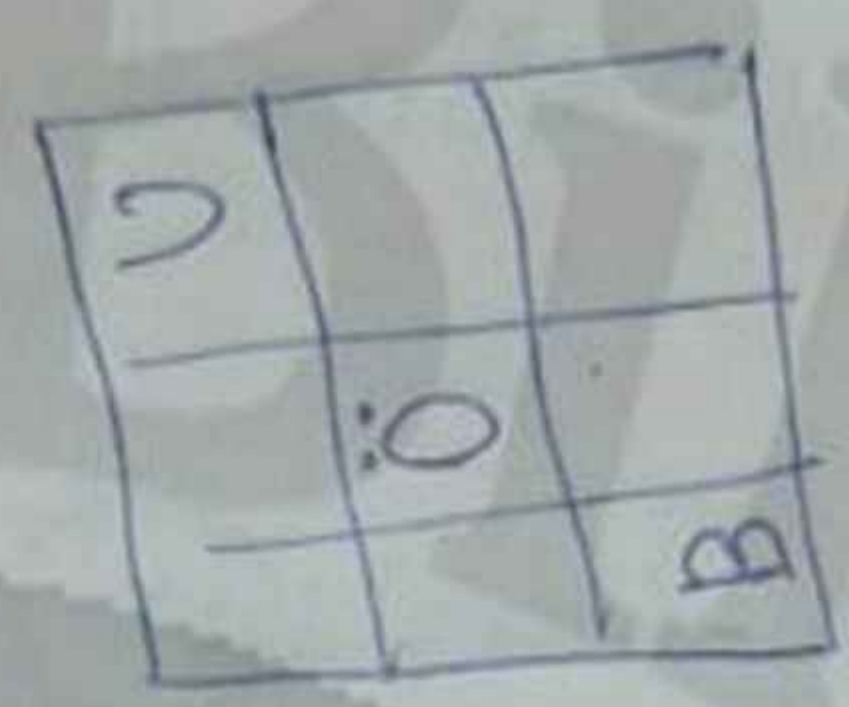


$$\frac{b}{c} \times a = d$$

$$\frac{4}{110} \times 110 = 4 \Rightarrow \textcircled{4}$$

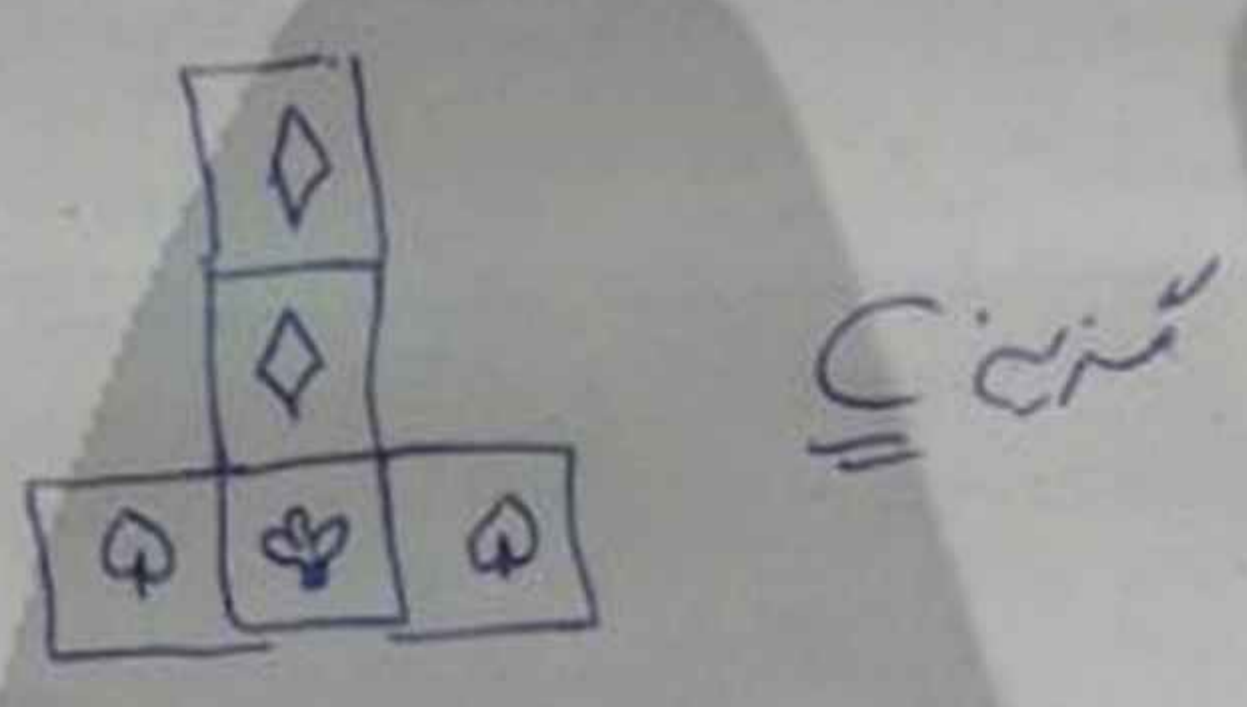
عمله حرکت به صورت فشرده  $\downarrow$   $u \rightarrow$   $\downarrow$   
 و بعد ۹ درجه در جهت چرخش کردن (در جهت عقربه های ساعت)

عمله حرکت به صورت  $\leftarrow$  و بعد ۹ درجه  $\rightarrow$   
 در جهت عقربه های ساعت چرخش

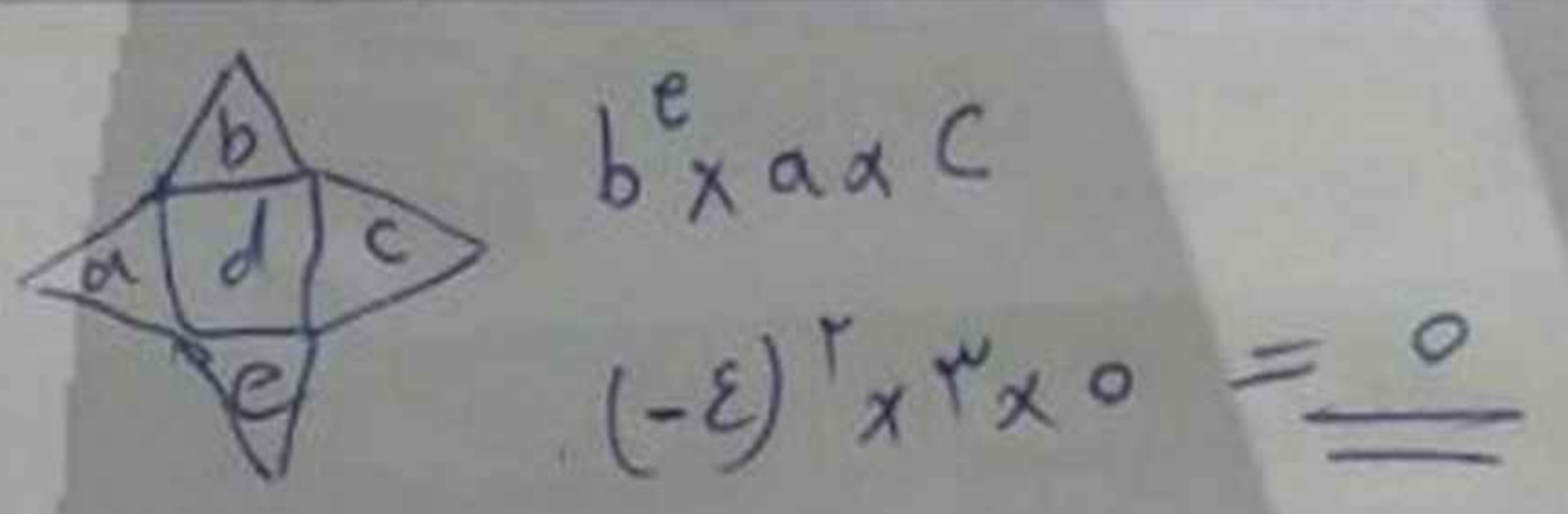


عمله حرکت به صورت  $\rightarrow$  و بعد ۹ درجه  $\rightarrow$   
 عقربه های ساعت در جهت چرخش

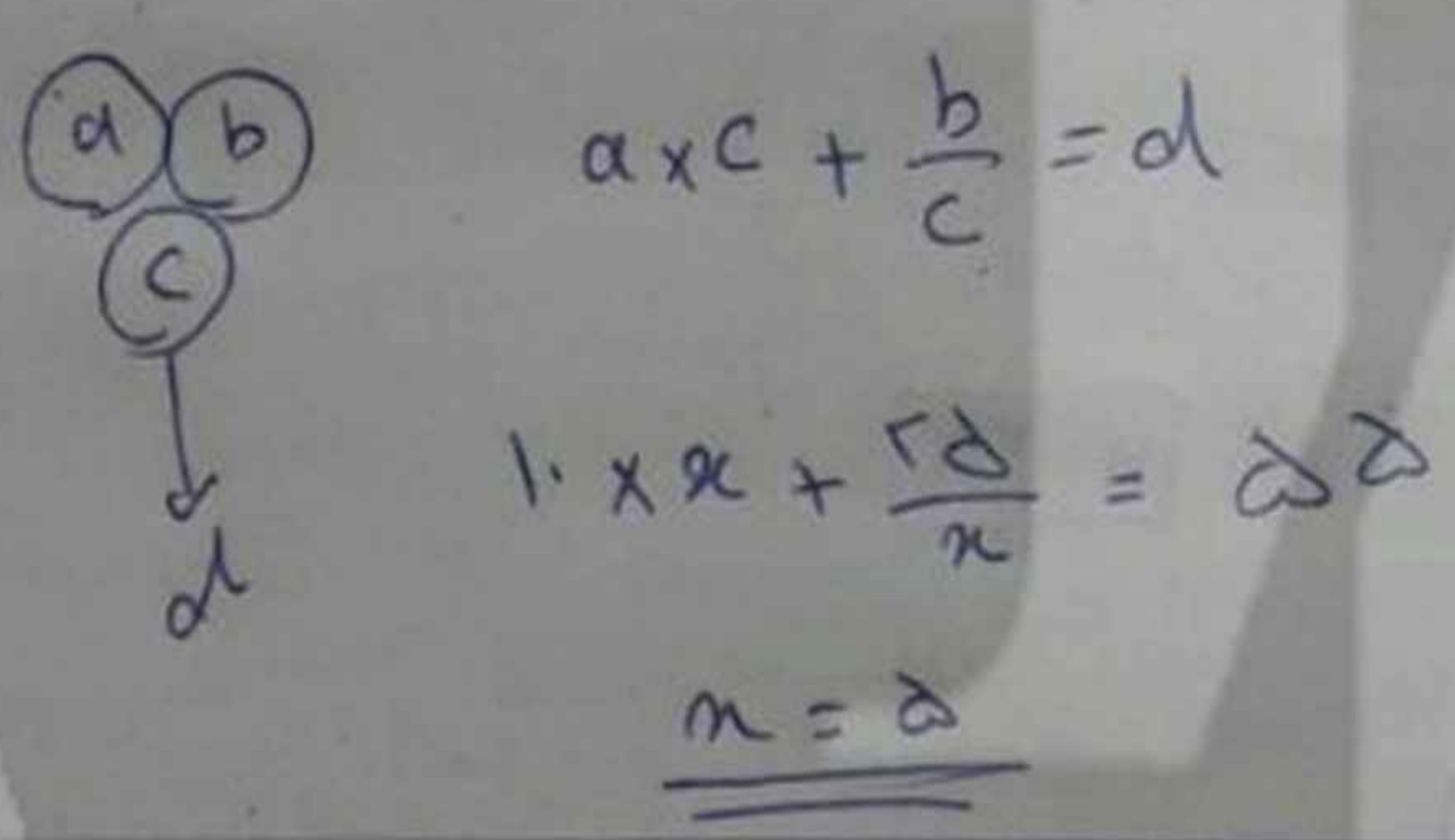
۱۸



۱۹



۲۰



۲۱

$a + b = f$        $a^r + b^r = ?$   
 $ab = r$

$(a+b)^r - r ab = ? \rightarrow 14 - f = ? \rightarrow 12$

۲۲

$\bullet = \blacktriangle$

$\triangle \nabla \square \diamond \circ$   
 $d \vee i k \wedge$

۲۳

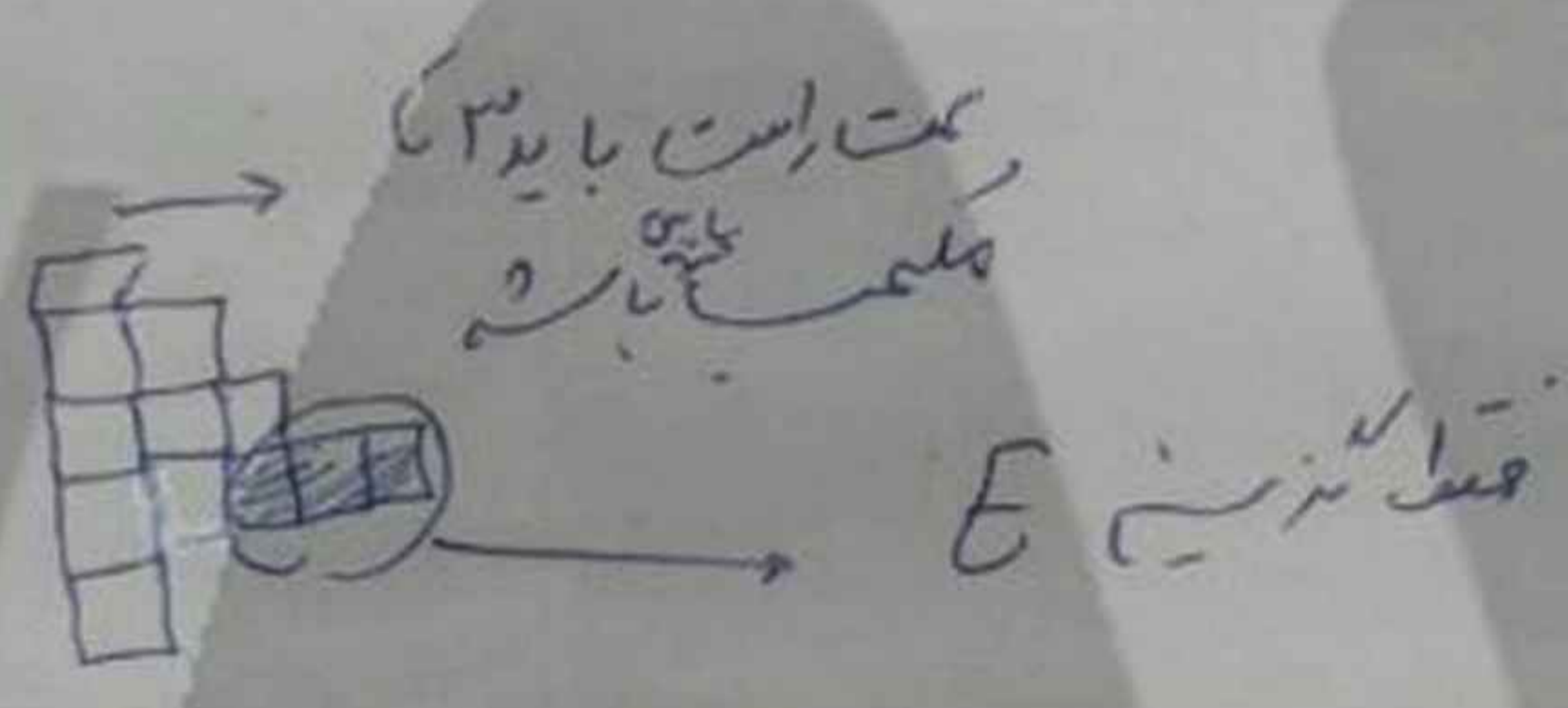
۵	۴	۳	۱	۲
.	۲	۵	۳	۴
۴	۳	۱	۲	۵
.	.	۴	۵	۳
۳	۵	۲	۴	۱

$4 \cdot y = 4$   
 $x = 2$   
 $y = 2$   
 $2 \times 2 = 4$

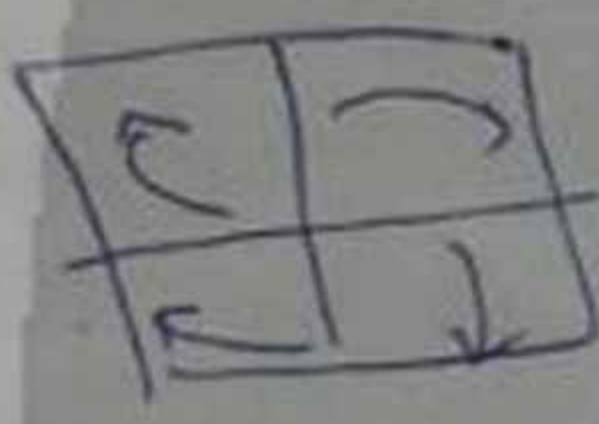
۲۴

طاب = ۴۴

۲۵



۲۶



در جهت عقربه‌های  
 ساعت چرخش  
 در جهت عقربه‌های  
 ساعت چرخش



مقدار هر یک را به ترتیب بنویسید

۲۷

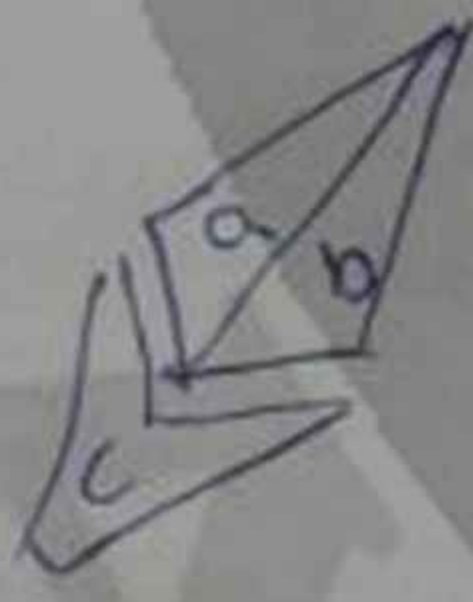
مثالی

$2n + (n - 4) = ?$

$3n - 4 \rightarrow$

$3 \times 4 - 4 \rightarrow 12$

۲۸



$a \times b = c$

$\Delta \times \Delta = \Delta \Delta$

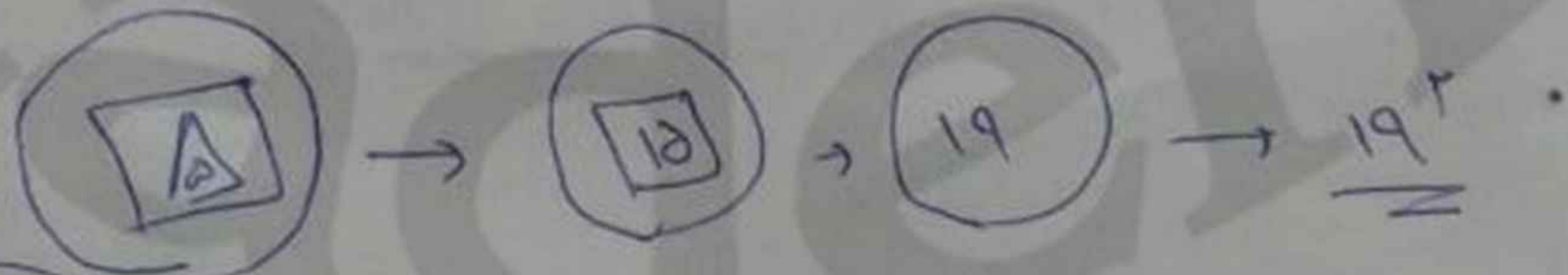
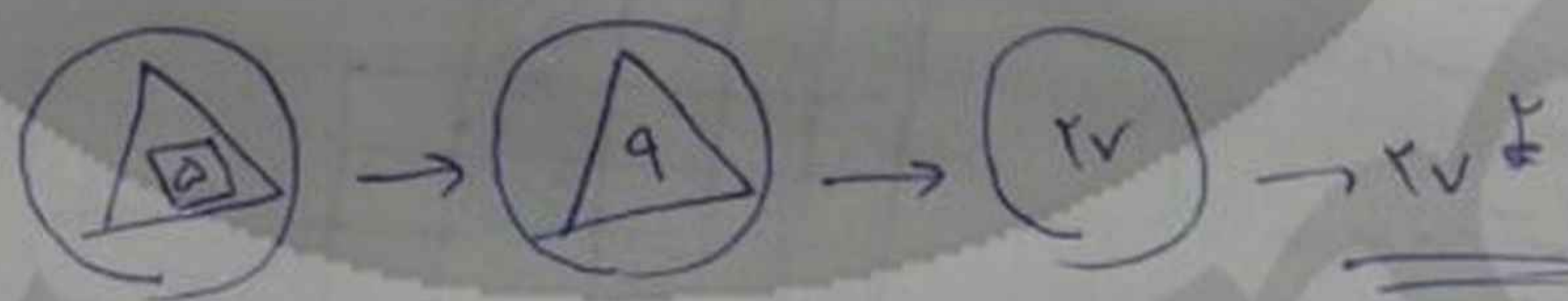
$n = 4$

۲۹

$\Delta a \Rightarrow 2a$

$\square a \Rightarrow 4 + a$

$\circ a \Rightarrow a^2$

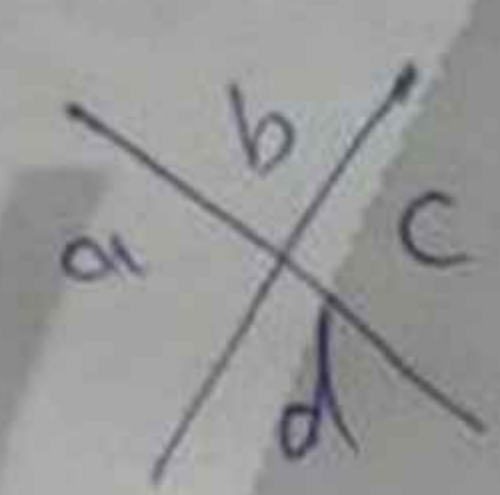


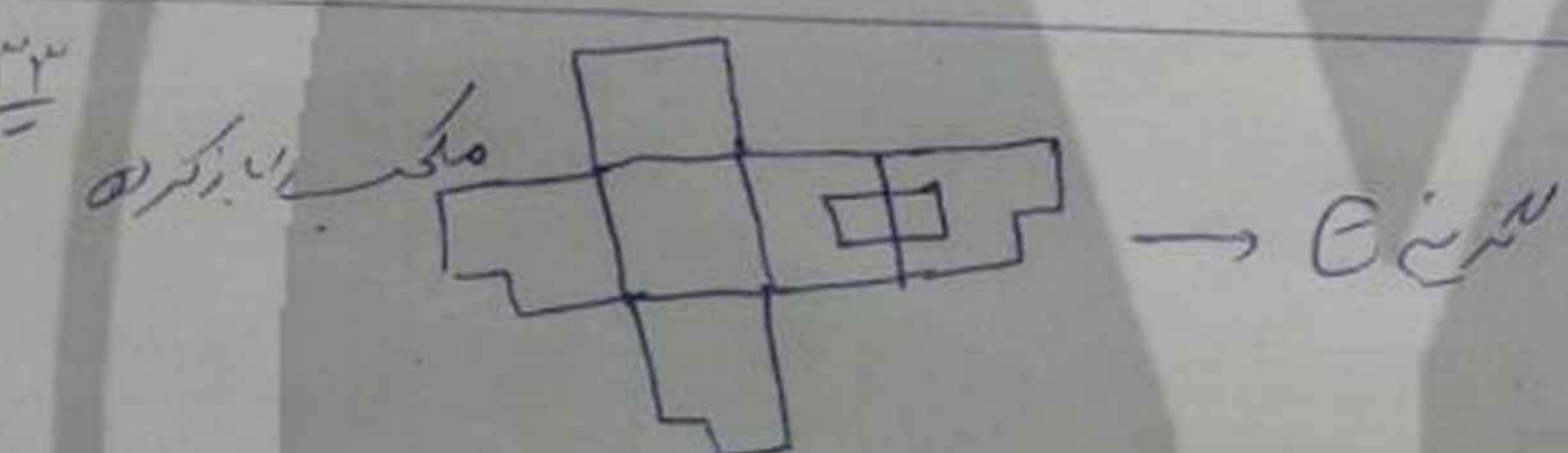
$19^2 + 25^2 \rightarrow 1.90$

۳۲  
 $a+c = b+v \rightarrow a-b = v$   
 $a+b = c-d \rightarrow a+b = -v$   
 $dc = 3d \rightarrow c = 3$   
 $a = 1$   
 $b = -2$

۳۳  
 $\square\square O \equiv \Delta\Delta$   
 $\square\Delta \equiv O$   
 $O O \equiv \square\square\Delta\Delta$   
 اگر  
 همه اشکال

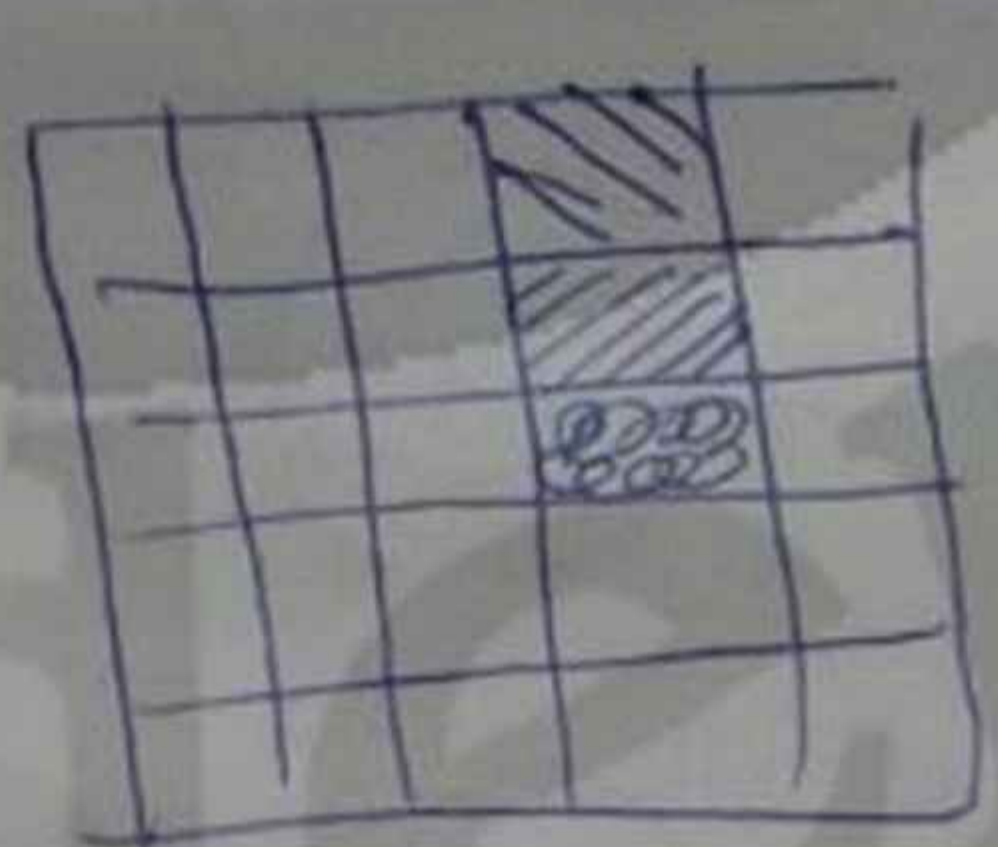
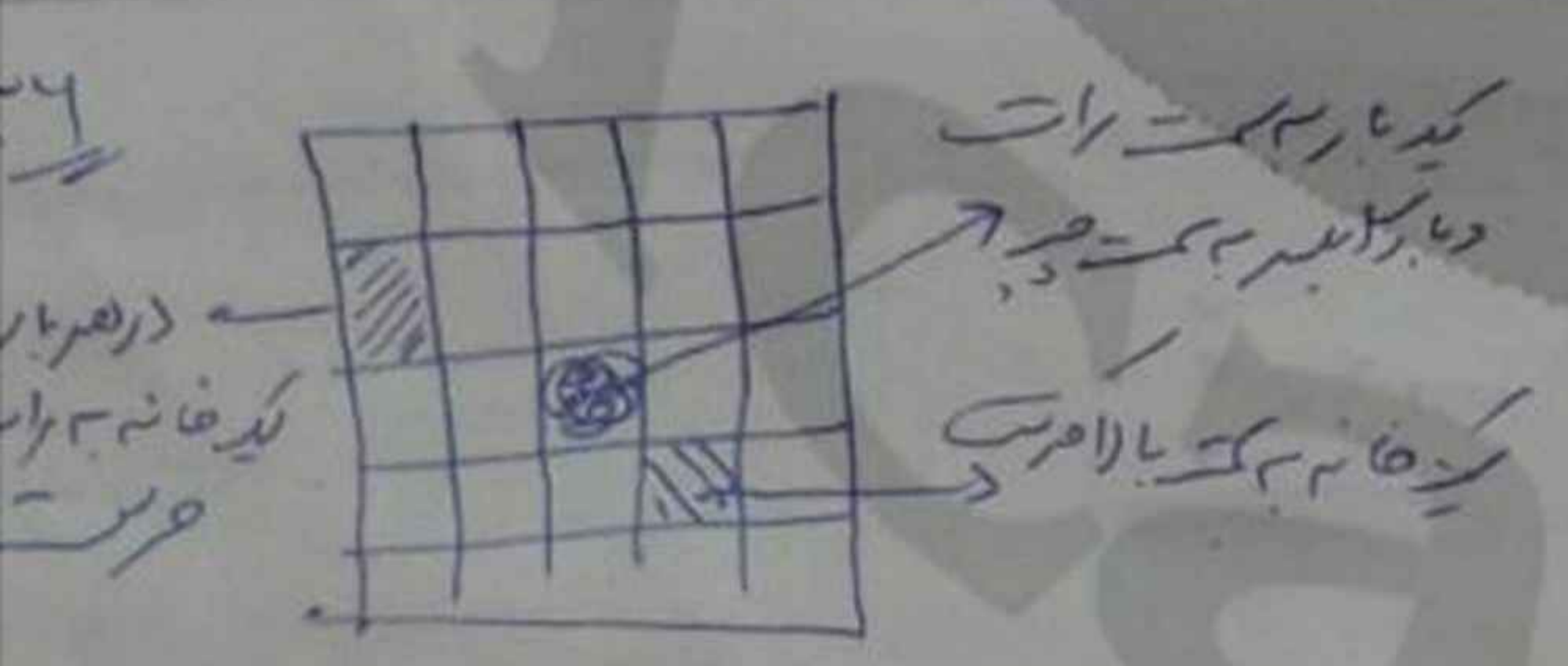
ساخته

۳۴  
  
 $a \times d = b - c$   
 $1 \times 8 = 11 - a$   
 $8 = 11 - a$   
 $a = 3$



۳۶  
 $\blacktriangle \rightarrow x a \rightarrow 2v$   
 $\blacktriangledown \rightarrow x b \rightarrow 13$   
 $\blacktriangle \rightarrow x c \rightarrow 13$   
 $a+b+c = ?$   
 $23$

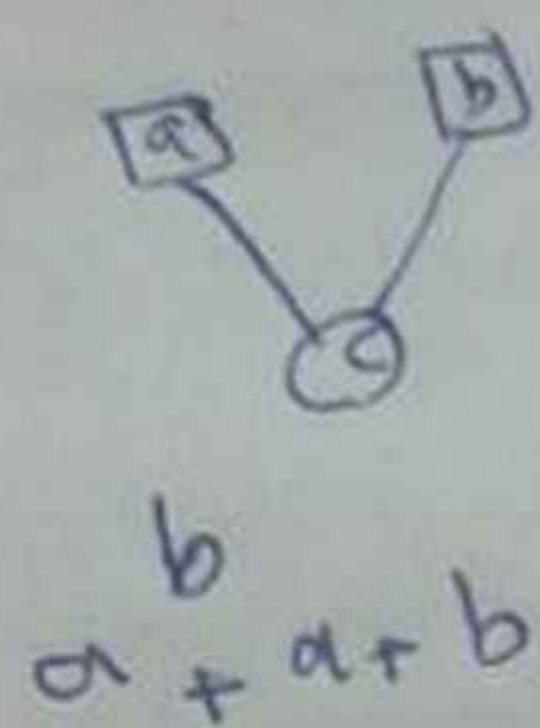
۳۷  
 $ab = 4d$   
 $dc = 3d \Rightarrow c = 3$   
 $c^2 = 9a \Rightarrow a = 1$   
 $cd = 12 \Rightarrow d = 4$   
 $b = 28$   
 $a+b+c+d = 35$





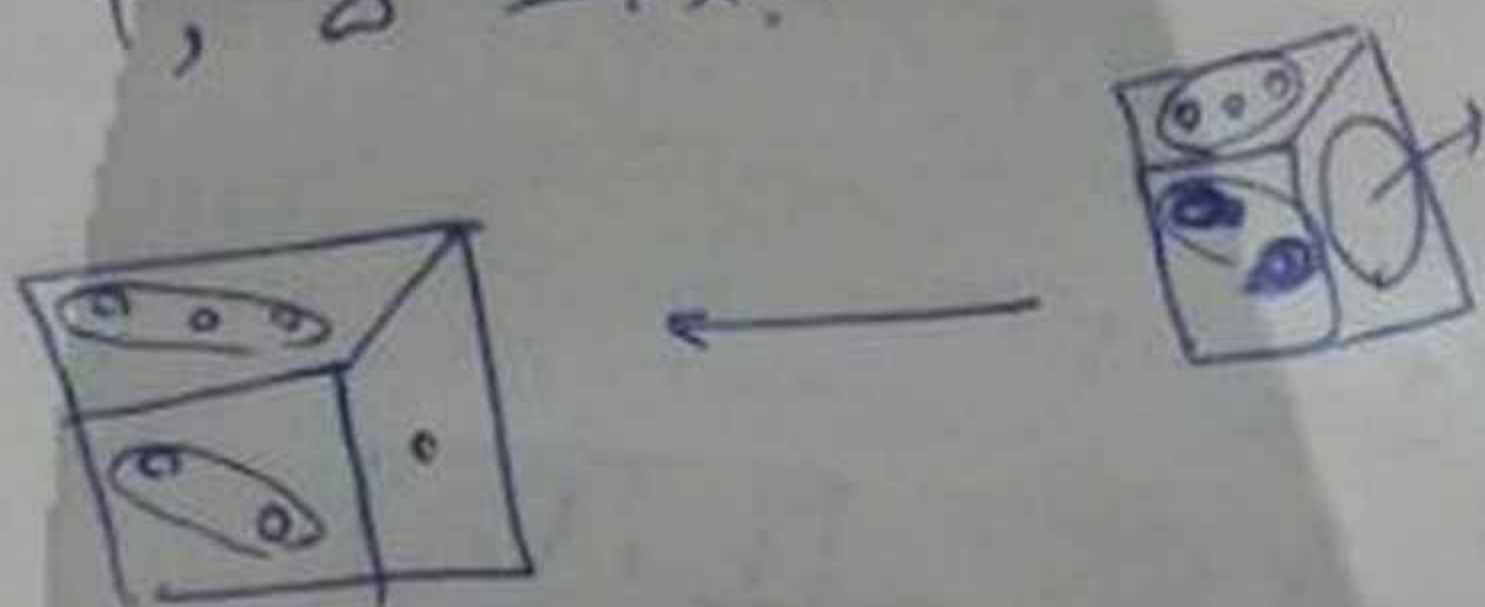
$$\begin{matrix} a & c \\ b & \end{matrix} \quad \frac{a}{b} = c \quad \frac{a}{1} = r \quad (a = r) \\ \frac{1}{b} = b \rightarrow (b = r) \\ \frac{r}{b} = r \quad b = r$$

$$a + b = ? \rightarrow r + r = (2r)$$



$$r + r + r = (1. 3r)$$

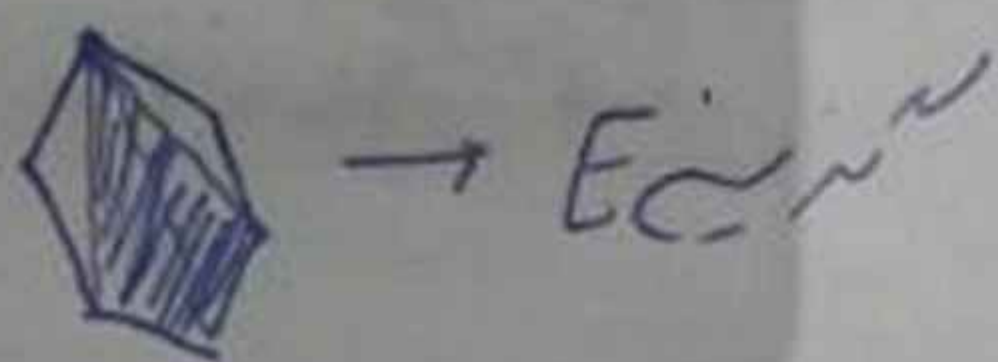
۴۹  
 ۱, ۴ → ۱۲ → B و D  
 ۳, ۵ → ۱۲ → C  
 ۲, ۵ → ۱۲



سینه E

A سینه

۵۰  
 ۲, ۳ و ۴ با هم جمع شده و شکل کامل می‌دهد

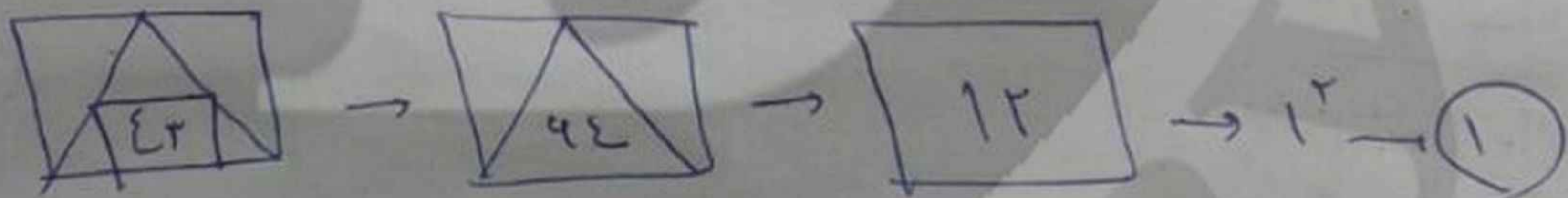


$$\frac{2a^4 + 9a^2}{2a^4}$$

$$\Rightarrow \frac{2^{1 \times 4} + 9^{2 \times 1}}{2^{4 \times 1}} \rightarrow \frac{2^4 + 9^2}{2^4} \rightarrow \frac{16 + 81}{16} \rightarrow \frac{97}{16}$$

$$\boxed{ab} \rightarrow a^b$$

$$\triangle cd \rightarrow c^d$$



$$\frac{1}{x-d} + \frac{1}{1r-ry} = 1 \quad x+y=?$$

$$x-d=r \quad x=v \\ 1r-ry=y \quad y=d$$

$$v+d = (1r)$$

$$\sum \quad ax = by = cz = \frac{1}{4}$$

$$a + b + c = r$$

$$x \cdot y \cdot z = r$$

$$\frac{a}{\frac{1}{x}} = \frac{b}{\frac{1}{y}} = \frac{c}{\frac{1}{z}} = \frac{1}{4} \quad \xrightarrow{+}$$

$$r \cdot \frac{a+b+c}{x+y+z+rz} = \frac{1}{4}$$

$$xy + yz + rz = 4$$

$$\sum \quad h(x) = \log_a^{(n-1)}$$

$$f(r) = ?$$

$$y = \log_a^{(n-1)} \rightarrow a^y = n-1 \rightarrow \frac{n-1}{a} = y$$

$$\sum \quad x - y - z = 0$$

$$\xrightarrow{+} \quad x + y = r$$

$$r_y + r_x + z = 14$$

$$y - r_x + r_z = 9$$

$n = ?$

$$x - y - z = 0$$

$$-cy - rx - z = -14$$

$$y - rx + rz = 9$$

$$\hline -ry - 2z = -r$$

$$r_x + y = 1$$

$$x + y = r$$

$$\rightarrow r_x = r$$

$$\underline{\underline{y = 1}}$$

$$\sum \quad \frac{x^2 - nx^r + rx^r + d}{A(x)} \quad \Rightarrow \quad \frac{x^2 - nx^r + rx^r + d}{A(x)}$$

$\hookrightarrow$

$$\frac{x^2 - nx^r + rx^r + d}{x^r - n + x} \quad \begin{array}{l} x^2 - nx^r + rx^r + d \\ -nx^r + n^r \\ \hline -nx^r + rx^r + n \\ + n^r + n \\ \hline rx^r - n \\ -rx^r + x \\ \hline x - n + d \rightarrow q - n \end{array}$$

$$\Rightarrow \quad \begin{array}{l} x^r = 1 \quad x \rightarrow +1 \\ (-1)^r = 1 \quad x \rightarrow -1 \end{array}$$

$$(-1)^x - (-1)^r + r(-1)^r + d = -a + b$$

$$1 + 1 + r + d = -a + b \rightarrow -a + b = 1$$

$$a - b = -1$$

$$\begin{array}{l} a \rightarrow -1 \\ b \rightarrow 9 \end{array} \rightarrow -1 - 9 = -10$$

$$\Rightarrow \quad p(x) = -rx^r + \epsilon x^r - ax + 4$$

$$p(r) = -\epsilon$$

$$p(-1) = ?$$

$$p(r) = -r\epsilon + 14 - ra + 4 = -f$$

$$p(-1) = r + \epsilon + 1 + 4$$

$$-r - ra = -\epsilon \quad \underline{a = 1}$$

$$\rightarrow 14$$

$$\underline{\underline{\text{Ex}}}$$

$$\frac{p(n+r)}{Q(n-1)} = -x^r + \varepsilon n + 9$$

$$Q(r) = r$$

$$p(a) = ?$$

$$a = r$$

$$\frac{p(a)}{Q(r)} = \cancel{r} + \cancel{r} + 9$$

$$p(a) = \textcircled{18}$$

$$\underline{\underline{\text{Q1}}}$$

$$(1-i)^1 = ?$$

$$((1-i)^r)^2 \rightarrow (-ri)^2 \rightarrow \underline{\underline{-r^2 i}}$$

$\underline{\underline{\text{Q1}}}$

$$z_1 = r_n + \varepsilon + y i$$

$$z_2 = 2n - r + (n+1)i$$

$$y = ?$$

$$z_1 = z_2$$

$$r_n + \varepsilon + \textcircled{y} i = 2n - r + \textcircled{(n+1)} i$$

$$y = n+1$$

$$r_n + \varepsilon = 2n - r$$

$$y = r_n$$

$$\underline{\underline{n=r}}$$

$$\underline{\underline{y=r}}$$

$\underline{\underline{\text{Q1}}}$

$$\frac{\sqrt[r]{108^{r+n+ry}}}{\sqrt[r]{r^2 \varepsilon n + ry}} = 408 \quad y = ?$$

$$\hookrightarrow \frac{\omega^{r_n + ry}}{\omega^{r_n + \varepsilon y}} \rightarrow \omega^{-y} = \omega^{\varepsilon} \rightarrow \underline{\underline{y = -\varepsilon}}$$

$\underline{\underline{\text{Q1}}}$

$$r^a \Delta r^b = a \cdot b \cdot r \quad 14 \Delta 9 = ?$$

$$r^a = 14$$

$$\underline{\underline{a = \varepsilon}}$$

$$r^b = 9$$

$$\underline{\underline{b = r}}$$

$$r \times \varepsilon + r = \textcircled{10}$$

$\underline{\underline{\text{Q2}}}$

$$a \Delta b \begin{cases} ab & a > b \\ b^a & d > b \end{cases}$$

$$\frac{(-r \Delta \varepsilon) \Delta (-1)}{(-r)^\varepsilon}$$

$$14 \Delta -1 \rightarrow (-1)^{14} \rightarrow \textcircled{1}$$

$\hookrightarrow 14$

$A = \{a, b, c, d\}$

$B = \{c, d, e, f\}$

$C = \{b, c, f\}$

$X = \{b, a, d\}$

$\rightarrow A - (B \cap C)$   
 $a, b, c, d \quad c, f \rightarrow \{a, b, d\}$

$A = \{x \mid r \leq x < 9n \quad n = rk \quad k \in \mathbb{N}\}$

$B = \{y \mid 10 \leq y \leq 1r \quad y = 2m \quad m \in \mathbb{N}\}$

$S(A - B) \rightarrow S(B) - S(A \cap B) = ?$

$10 \leq 2m \leq 1r \rightarrow r \leq m \leq r/2 \rightarrow r/2 - r + 1 \rightarrow (r/2)$

$\cap \rightarrow 10 \leq 1h < 9n \rightarrow 10 \leq < 9n \rightarrow r \leq h \leq 9 \quad 9 - r + 1 = (9 - r + 1)$

$r/2 - 1 \rightarrow (1r/2)$

$9r \rightarrow \bullet$   
 $2r \rightarrow \square$   
 $\rightarrow \frac{1 \cdot 1}{9} \rightarrow 1r \times 2 \rightarrow 2r \rightarrow \frac{2r}{9} \rightarrow 2r + 3 = (2r)$

$\log_p \frac{p^{n-r} + 1}{n+1} = 1$   
 $\frac{p^{n-r} + 1}{n+1} = p$   
 $p^{n-r} + 1 = p(n+1)$   
 $n = 2$

$\left( \frac{r}{1 - r/2} - \frac{r + 1/2}{2} \right)^{-1} \cdot (-1 \frac{2}{2}) = ?$

$\left( -\frac{1}{9} - \frac{1}{10} \right)^{-1} \Rightarrow \frac{-9 \cdot 10}{10 \cdot 9} = -\frac{9}{8} \rightarrow \frac{-9}{10} \times -\frac{8}{9} \rightarrow \frac{8}{10} = \frac{4}{5}$

$\Delta, \ominus, \oplus \in \mathbb{Z}^+$   
 $\Delta \cdot \oplus = r$   
 $\oplus \cdot \ominus = 8$

$m_n(\Delta + \ominus) = ?$   
 $\rightarrow (2)$

41  $x^r + y^r - 4y - y^r = r \rightarrow x^r - y^r + y(n-y) = r$   $\frac{(x-y)(x+y)}{r} = r$

$x+y = \epsilon$

$x^r - y^r = ? \rightarrow (x-y)(x+y) \rightarrow \epsilon \times r = \textcircled{1}$

42  $x = \text{مركب}$   
 $a = \text{فرد}$   $\rightarrow x = ra$

$a = \text{مركب}$   
 $b = \text{فرد}$   $\rightarrow x = rb$

$\frac{r}{r} = \frac{a}{r} + r \rightarrow \frac{a}{r} - \frac{a}{r} = r \rightarrow \frac{a}{r} = r$   $r = 10$

43  $\left. \begin{matrix} 1. x = \epsilon \\ 2. y = r \end{matrix} \right\} \begin{matrix} 1. 43 - rny = ? \\ 1. (ry - ny) \rightarrow y(4 - rn) \end{matrix}$

$\rightarrow \left( \frac{1.4}{1.rn} \right)^y \rightarrow \left( \frac{1.4}{r4} \right)^y = \textcircled{4}^y$

$\rightarrow r^y \rightarrow \underline{\underline{urq}}$

44  $a + \frac{r}{b} = v$   $\frac{vb + \epsilon a - \frac{1}{r}}{ra}$

$rb + \frac{\epsilon}{a} = 1$

$ab + r = vb \rightarrow ab + r = vb \Rightarrow rab + \epsilon id = vb + \epsilon a$

$rab + \epsilon = 1a \rightarrow ab + r id = \epsilon a$

$\frac{rab + \epsilon id - id}{ra} \rightarrow \frac{rab + \epsilon}{ra} \rightarrow b + \frac{\epsilon}{ra} = \textcircled{3}$

45  $\lim_{n \rightarrow \infty} \left( \frac{\frac{r n(n+1)}{r} + n}{2nr + n + r} \right) = ? \rightarrow \frac{\frac{rnr}{r}}{2nr} = \textcircled{\frac{1}{2}}$

46  $\frac{(x-y)^r}{(y-x)^r} + \frac{(x-y)^r}{(y-x)^r} = ? \rightarrow -1 + 1 = \textcircled{0}$

47  $\sqrt{x} \rightarrow x+y$

$\frac{r \cdot x}{x+y} \rightarrow \frac{r \cdot x}{x+y}$

$\frac{r \cdot n}{x+y} \rightarrow \frac{r \cdot n}{x+y}$

$$48 \rightarrow g(u) = ru + d$$

$$(f \circ g)(u) = x^r + 1$$

$$h(r) = ?$$

$$g(u) = a \quad f^{-1}(ru + d) = x^r + 1$$

$$h(x^r + 1) = ru + d$$

$$m-r \rightarrow -\varepsilon + d = 1$$

49

$$h(xu + 1) = \frac{\varepsilon u + d}{a - vu}$$

$$h^{-1}(-1) = \varepsilon \rightarrow h(\varepsilon) = -1$$

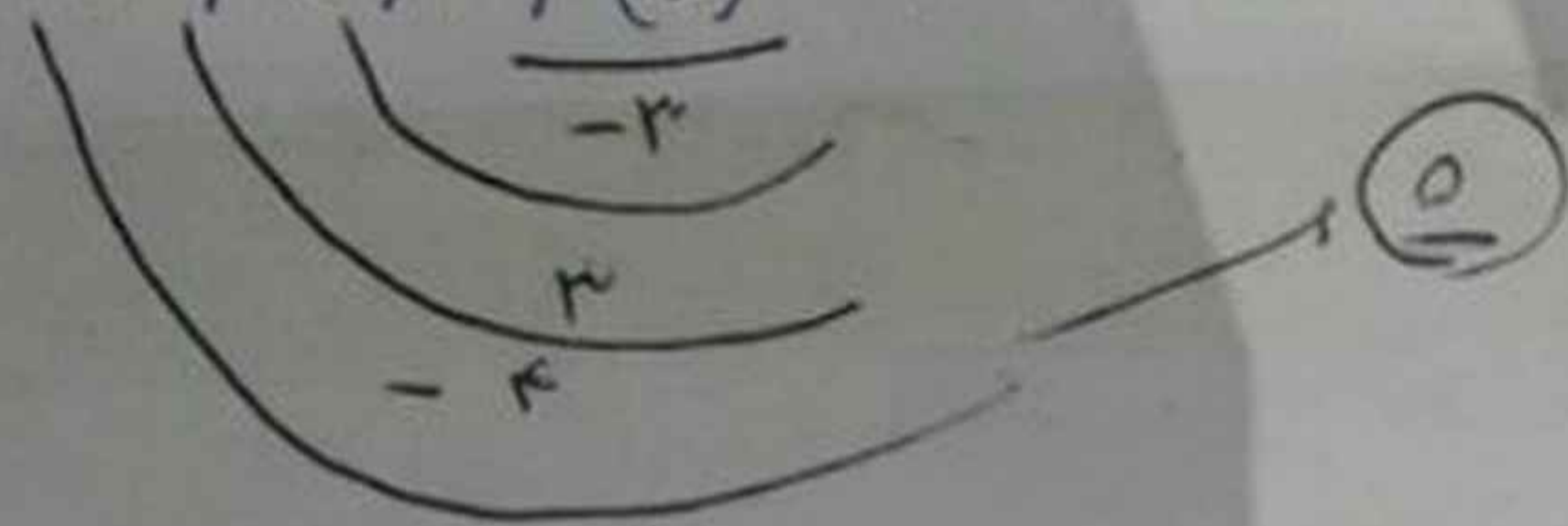
$$m-1 \quad h(\varepsilon) = \frac{q}{a-v} \Rightarrow a = -r$$

$$h(r) = ?$$

$$m-r \quad h(r) = \frac{r1}{-r-r} \rightarrow h(r) = \frac{r1}{-2r} = \left(\frac{v}{-1}\right)$$

50

$$h \circ h \circ h \circ h(x) = ?$$



51

$$f: \mathbb{R} \rightarrow \mathbb{R} \quad h(x^a - x + 1) = u + r$$

$$f^{-1}(u) = ?$$

$$\rightarrow f^{-1}(u+r) = x^a - u + 1$$

$$u+r = t \quad u = t-r$$

$$f^{-1}(x) = x^{a-r} + x + r + 1 \rightarrow x^{a-r} - u + \varepsilon$$

52

$$\frac{1}{\cot u} \cdot \frac{1}{\tan u} = r$$

$$\cot^r u + \tan^r u = ?$$

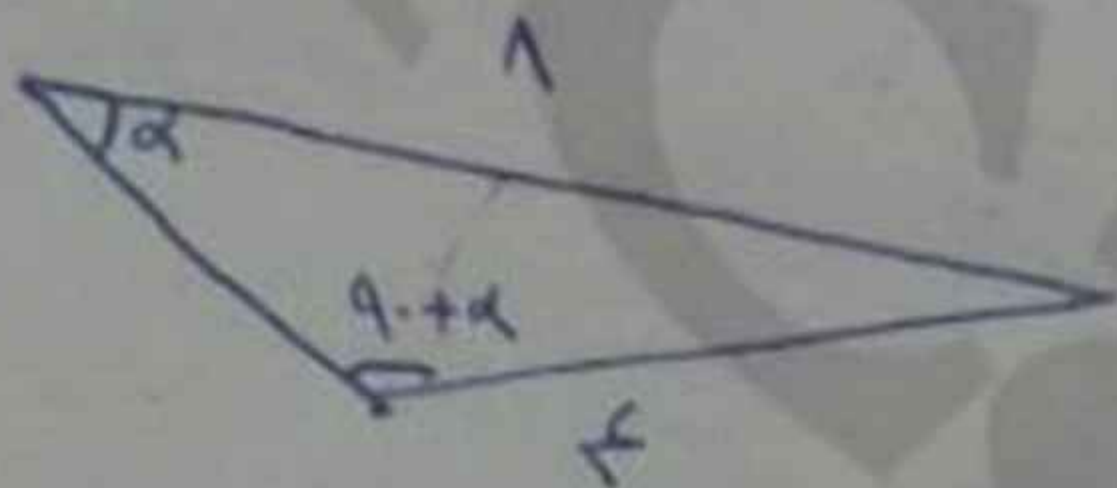
$$\tan u \times \cot u = 1$$

$$\frac{\tan u - \cot u}{\cot u \times \tan u} = r$$

$$\rightarrow \tan u - \cot u = r \rightarrow \tan^r u + \cot^r u - r = \varepsilon$$

$$\tan^r u + \cot^r u = \underline{\underline{4}}$$

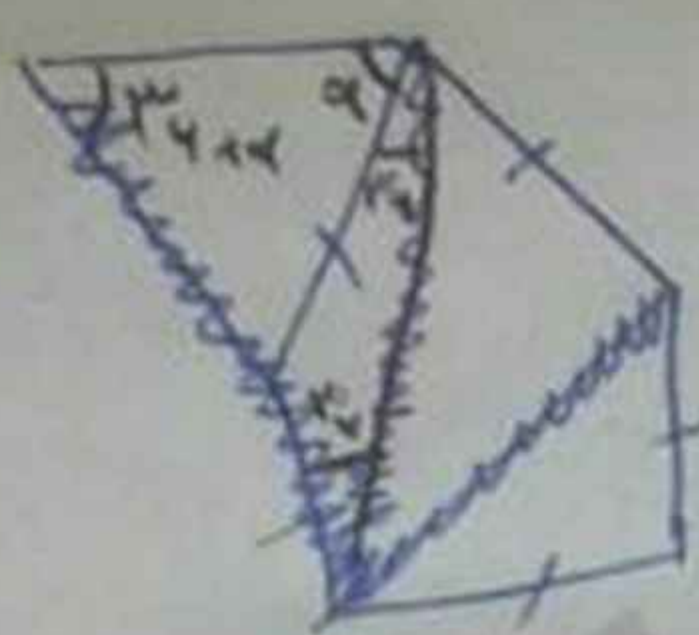
53



$$\frac{r}{\sin \alpha} = \frac{1}{\sin(90-\alpha)} \rightarrow \frac{r}{1} = \frac{\sin \alpha}{\cos \alpha}$$

$$\cot \alpha = r$$

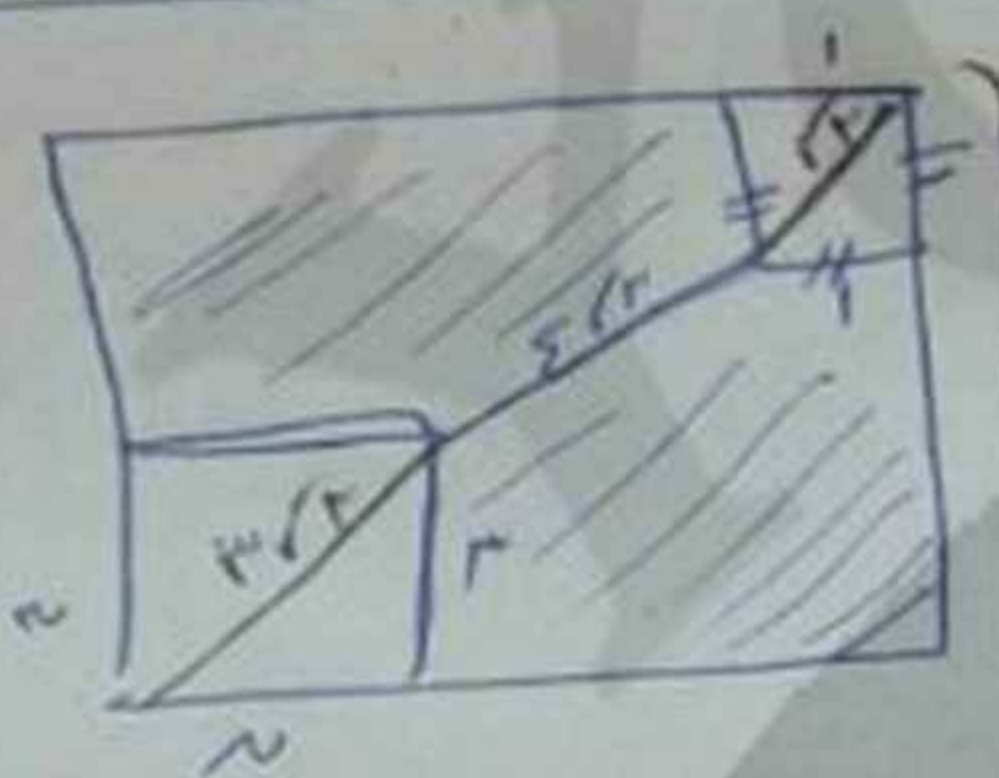
12



$1. \Lambda \text{PK} = 1\Lambda.$

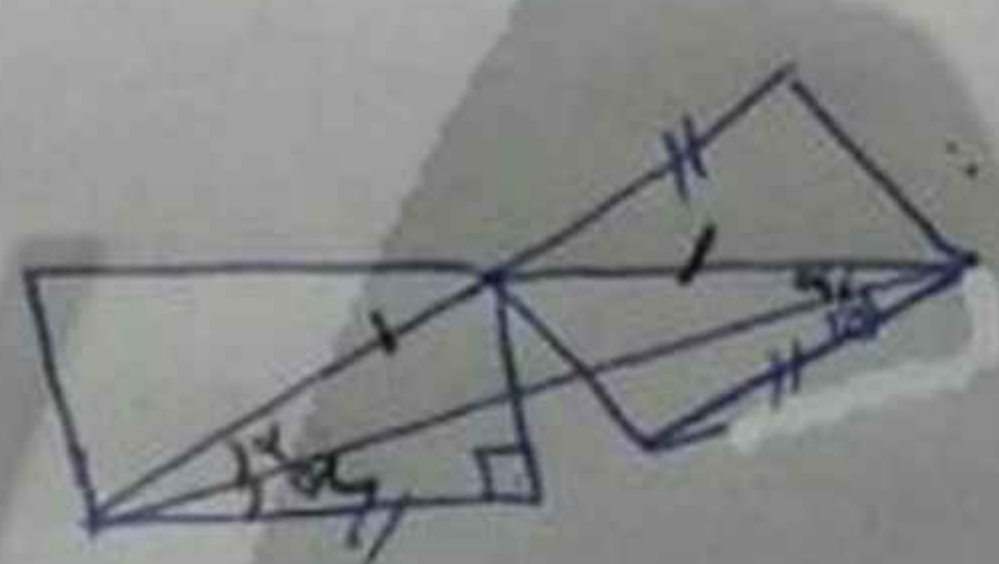
$\alpha = 34$

13



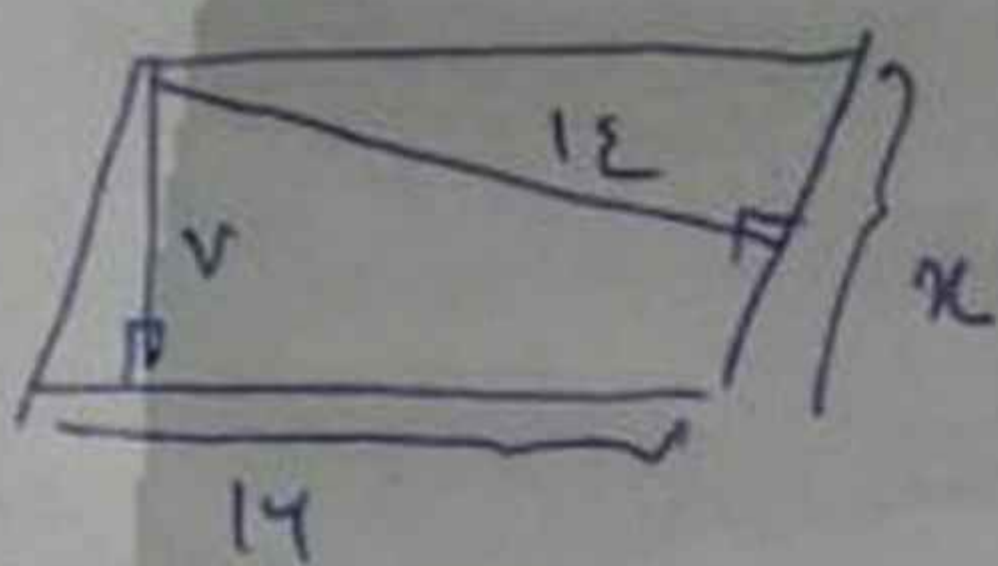
$\Lambda \text{PK} = (\text{PK} + \text{PK}) \rightarrow \sigma$

14



$\sigma + \alpha = \alpha \times \text{CS} \quad \sigma = \text{CS}$

15

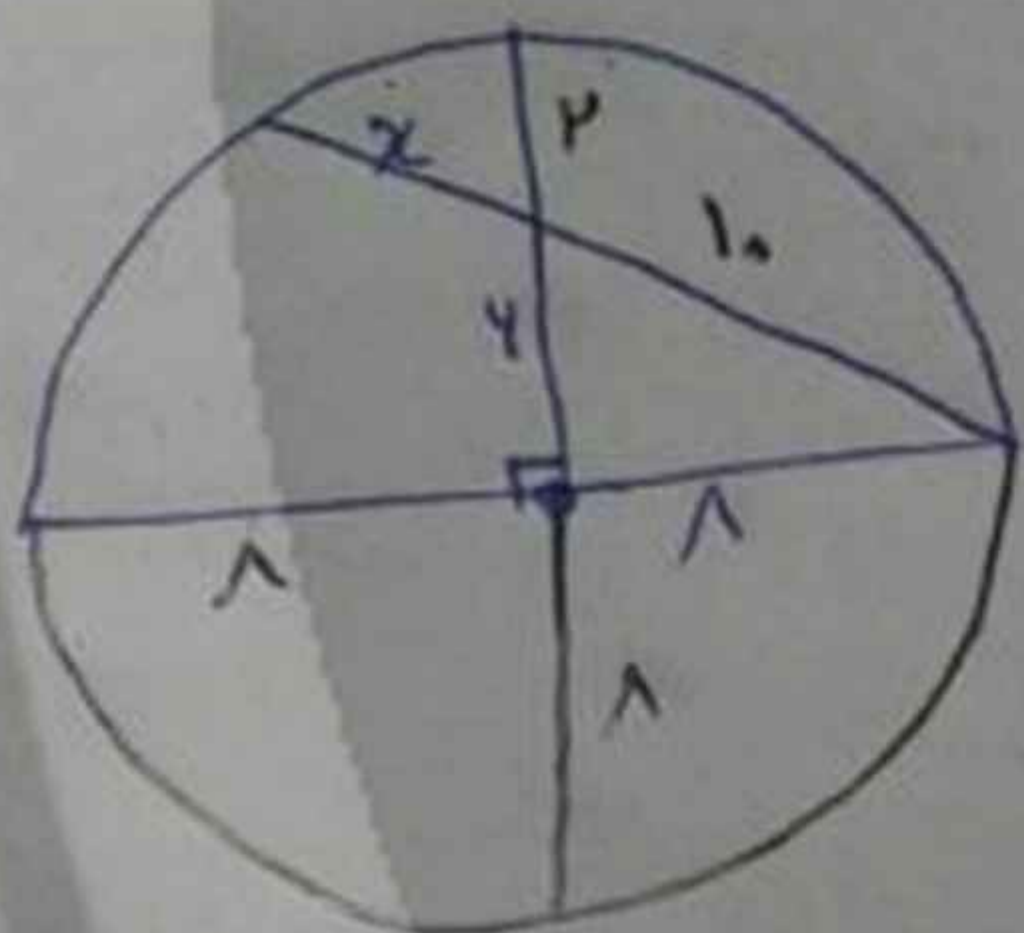


$\sigma \times \mu = \sigma \times \lambda$

$\mu = \lambda$

$\sigma \times \lambda + \mu \times \lambda = \text{E}\Lambda$

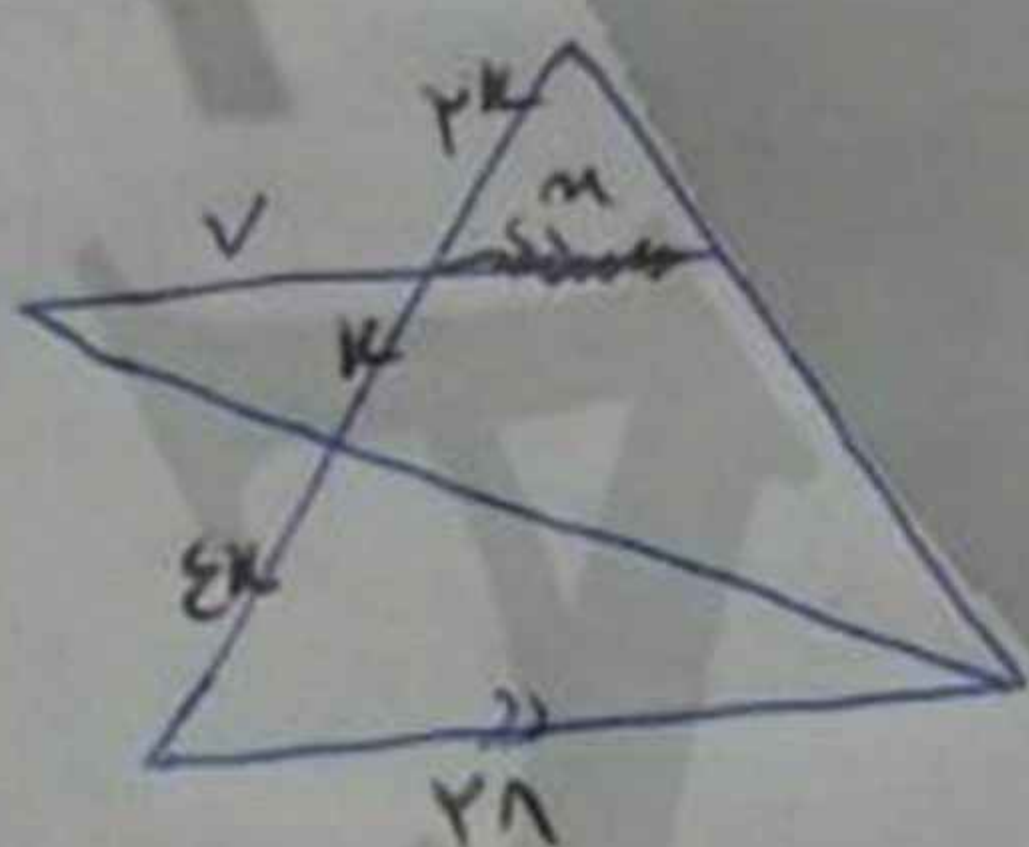
16



$1. \alpha \mu = \mu \times \lambda$

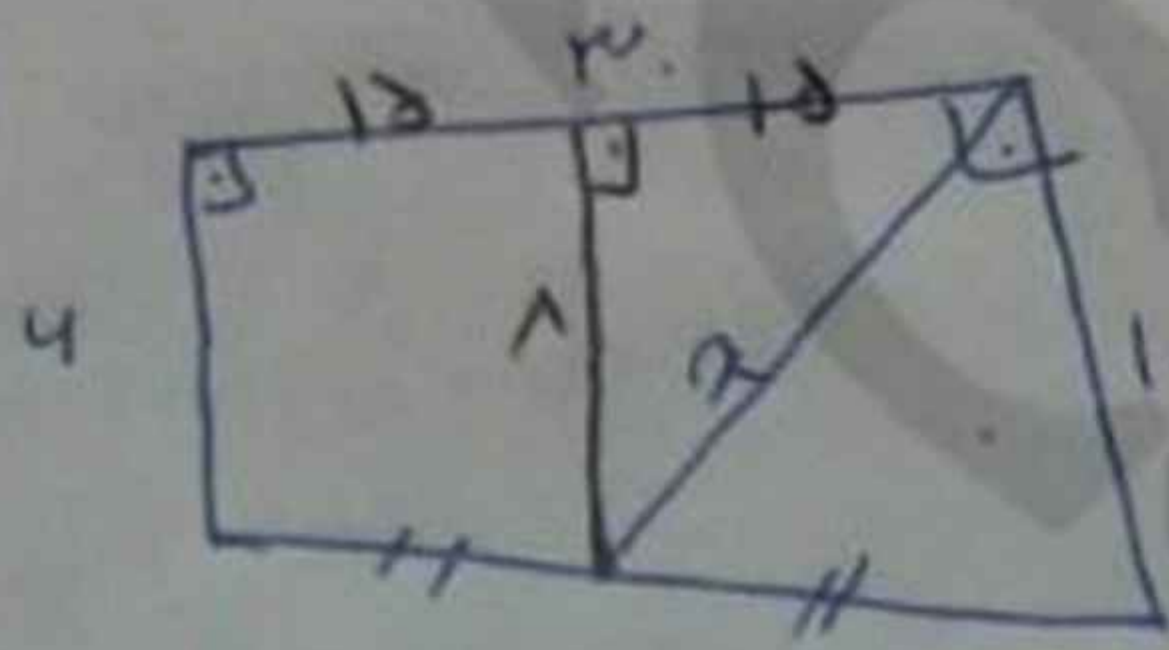
$\alpha = \lambda$

17



$\frac{\lambda}{\sigma} = \frac{\lambda}{\sigma} \quad \alpha = \lambda$

18



$\mu = \lambda$



Kitapçık Türü / Booklet Code: 210703

IÜCYÖS 2021  
**YURTDIŞINDAN VEYA YABANCI UYRUKLU  
ÖĞRENCİ SINAVI**  
EXAMINATION FOR FOREIGN OR OVERSEAS STUDENTS

ADI / NAME		KİTAPÇIK TÜRÜ BOOKLET TYPE  C
SOYADI / SURNAME		
ADAY NO / APPLICANT NUMBER		
SINAV SALON ADI EXAM ROOM NAME		

**TEMEL ÖĞRENME BECERİLERİ TESTİ**  
BASIC LEARNING SKILLS TEST

**GENEL AÇIKLAMA**

- Bu sınavdaki soruların nasıl cevaplanacağı, testlerin başında açıklanmıştır. Soruları cevaplamaya başlamadan önce bu açıklamaları dikkatle okuyunuz.
- Bu testlerdeki her sorunun bir tek doğru cevabı vardır. Bir soru için birden çok cevap yeri işaretlenmişse, o soru yanlış cevaplanmış sayılacaktır.
- Cevap kağıdında imzanızı ayrılmış alana atınız ve kitapçık türünü mutlaka kodlayınız. Kitapçık türünü kodlamadığınızda veya eksik kodladığınızda sınavınız değerlendirilmeye alınmayacaktır.
- Cevaplarınızı koyu siyah ve yumuşak bir kurşun kalemle işaretleyiniz. İşaretlerinizi cevap yerinin dışına taşırmayınız. Tükenmez kalem veya dolma kalem kullanmayınız.
- Cevap kağıdınızı buruşturmayınız, katlamayınız ve üzerine gereksiz hiçbir işaret koymayınız.
- Değiştirmek istediğiniz bir cevabı, yumuşak bir silgiyle, cevap kağıdını orsellemeden, temizce siliniz ve yeni cevabınızı işaretlemeyi unutmayınız.
- Bu testler puanlanırken, doğru cevaplarınızın sayısından yanlış cevaplarınızın sayısının dörtte biri düşülecek ve kalan sayı net cevap sayınız olacaktır.
- Sınavda uyulacak diğer kurallar bu kitapçığın arka kapağında belirtilmiştir.

**GENERAL INSTRUCTIONS**

- The exam instructions appear at the beginning of the tests. Please read them carefully before beginning.
- In these tests there is only one correct answer for each question. If more than one alternative is marked for a question, that answer will automatically be considered wrong.
- Sign the answer sheet on the specified field "Signature". It is extremely important that you mark the booklet group. An applicant's examination is declared invalid if she/he does not mark the booklet group.
- You should use a soft, black pencil to mark the answer sheet. Completely fill in the circle for the answer you have chosen, but make sure your mark does not go beyond the borders of the circle. Do not use any kind of pen.
- Keep the answer sheet flat and do not fold it. Do not make any unnecessary marks on it.
- If you wish to change an answer, carefully erase it completely with a very soft eraser. Do not forget to mark your answer.
- In the scoring of the tests, for every four incorrect answers, one correct answer will be deducted; the remaining will be your net answers.
- The other regulations concerning the administration of the tests are mentioned at the back of the booklet.







1.  $A = (-\infty, 2]$   
 $B = [5, \infty)$   $\Rightarrow (A' \cap B') = ?$

- A)  $(-\infty, \infty)$       B)  $(2, 5]$       C)  $[2, 5]$   
D)  $[2, 5]$       E)  $(2, 5)$

2.  $(3a - 5b)^2 + (2b - 3c)^2 = 0$   
 $\Rightarrow \frac{2a - 4b + 5c}{b - 3c} = ?$

- A)  $-\frac{7}{2}$       B)  $-\frac{8}{3}$       C)  $-\frac{11}{6}$       D)  $\frac{5}{2}$       E)  $\frac{10}{3}$

3.  $\frac{(\frac{1}{2} + \frac{1}{5}) : (0.24 - 0.1 \times 0.3)}{(2.\bar{9})^{-1} \times \frac{1}{10}} = ?$

- A) 0.01      B) 0.1      C) 0.9      D) 90      E) 100

4.  $(48x - y) - (47x - y) + \dots - (x - y) = ?$

- A)  $x - y$       B)  $y$       C)  $24x$   
D)  $8x - 2y$       E)  $48x$

5.  $x \in \mathbb{N}$ ,

$$2^{1-\frac{x^2}{4}} \leq 1 \leq 5^{5-x} \Rightarrow \sum x = ?$$

A) 4    B) 5    C) 9    D) 14    E) 17

6.  $\frac{\sqrt{12} - \sqrt{28} + \sqrt{15} - \sqrt{35}}{(-2 - \sqrt{5})} \cdot (\sqrt{3} + \sqrt{7}) = ?$

A) 2    B) 3    C) 4    D) 5    E) 7

7.  $x, y, z \in \mathbb{R}$ 

$$\begin{cases} \frac{yz}{y+z} = \frac{4}{11} \\ \frac{xz}{x+z} = 2 \\ \frac{xy}{x+y} = \frac{3}{10} \end{cases} \Rightarrow \frac{13x}{y} - z = ?$$

A) 24    B) 42    C) 67    D) 91    E) 120

8.  $\frac{5x+a}{b-4x} \geq 0, x \in [-3, 1] \Rightarrow \min(a+b) = ?$

A) 4    B) 11    C) 15    D) 19    E) 20



9.  $\frac{x^4 + 3x^2 + 4}{x^4 + x^3 + 2x^2} = ?$

A)  $\frac{x-2}{x^2+x+1}$

B)  $\frac{x^2+x+2}{x}$

C)  $\frac{x^2-x+2}{x^2}$

D)  $\frac{x^2}{x+2}$

E)  $\frac{x^2+x+1}{x+1}$

10.  $a, b \in \mathbb{Z}^-, \frac{1}{a} > \frac{1}{b}$

$\Rightarrow |b-a| + |2b+a| - |b| = ?$

A)  $-2b-2a$

B)  $-2b$

C)  $-2a$

D) 0

E)  $b-2a$

11.  $(\sqrt{x} + \frac{1}{2\sqrt{x}})^2 + 2(\sqrt{x} + \frac{1}{2\sqrt{x}}) + 1 = 0$

$\Rightarrow x^2 + \frac{1}{16x^2} = ?$

A)  $-\frac{1}{2}$

B)  $-\frac{1}{4}$

C) 0

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

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

12.  $z_1 = 7 + 3i$   
 $z_2 = 5 - 2i$   
 $\Rightarrow z_1 - z_2 = ?$

A) 2

B)  $2 + i$

C)  $2 + 5i$

D)  $2 - i$

E)  $12 + i$



13.  $z = \frac{\cos 75 + i \sin 75}{\cos 30 + i \sin 30} \Rightarrow z = ?$

A)  $\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2}i$     B)  $\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2}i$     C)  $\frac{1}{2} + \frac{\sqrt{2}}{2}i$

D)  $\frac{1}{2} - \frac{\sqrt{2}}{2}i$     E)  $\frac{\sqrt{3}}{2} + \frac{\sqrt{2}}{2}i$

14.  $\ln(x - 1) + \ln 5 = 1 \Rightarrow x = ?$

A)  $\frac{e + 5}{5}$     B)  $\frac{e + 1}{5}$     C)  $\frac{e}{5}$

D)  $\frac{e - 1}{5}$     E)  $\frac{e - 5}{5}$

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

A) 24    B) 25    C) 26    D) 27    E) 28

16.  $\sin x - \cos x = \frac{2}{\sqrt{10}} \Rightarrow \tan 2x = ?$

A)  $\frac{3}{4}$     B)  $\frac{1}{2}$     C)  $\frac{5}{12}$     D)  $\frac{3}{10}$     E)  $\frac{1}{5}$



17.  $P^3(x) = 64. P(x+1) \Rightarrow P(3) + P(2) = ?$

- A) 1    B) 4    C) 8    D) 16    E) 20

19.  $f(x) = -x + 2 \Rightarrow (f \circ g)(3) = ?$

$g(x) = -x^2 + 5$

- A) 1    B) 3    C) 4    D) 6    E) 9

18.  $g(3x+1) = \begin{cases} x-2, & x \geq 2 \\ x^2, & x < 2 \end{cases}$

$\Rightarrow g(4) + g(10) = ?$

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

20.  $f: \mathbb{N} \rightarrow \mathbb{N}$

$f(x) = \sqrt{x} - 2 \Rightarrow f(36) + f(49) = ?$

- A) 15    B) 12    C) 9    D) 6    E) 3

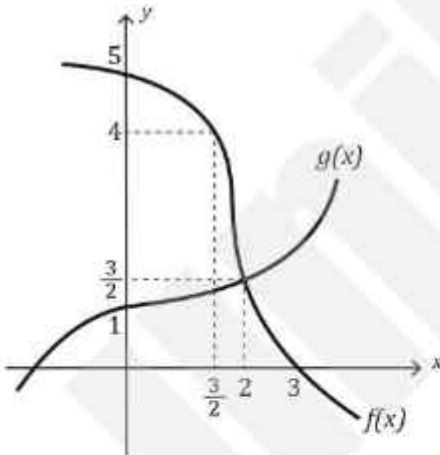
21.  $g(x) = c \quad (c \in \mathbb{R})$

$$g(x) = (a - 2)x^2 + (b + 5)x + a \cdot b$$

$$\Rightarrow g(x) = ?$$

- A) -10    B) -6    C) -2    D) 2    E) 5

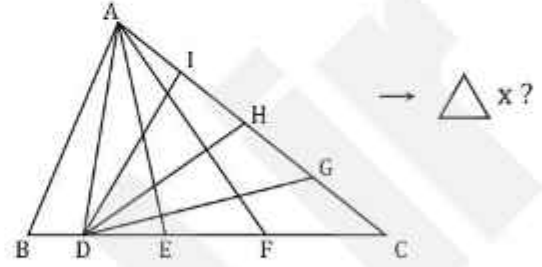
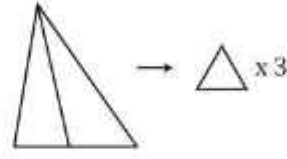
22.



$$g(0) + f(3) + (f \circ g)(2) = ?$$

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

23.



- A) 42    B) 46    C) 50    D) 54    E) 60

24.  $f: [-1,6] \rightarrow \mathbb{R}, \quad a, b \in \mathbb{R}$

$$\left. \begin{array}{l} f(x) = x^2 - 6x + 12 \\ f(a) = b \end{array} \right\} \Rightarrow P(a \geq b) = ?$$

- A)  $\frac{1}{8}$     B)  $\frac{1}{7}$     C)  $\frac{1}{4}$     D)  $\frac{3}{7}$     E)  $\frac{4}{7}$



## İÜCYÖS 2021

25.  $\lim_{x \rightarrow \infty} \frac{\sin x}{x} = ?$

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

26.  $\lim_{x \rightarrow 9} \frac{x-9}{\sqrt{x}-3} = ?$

- A)
- $0$
- B)
- $1$
- C)
- $3$
- D)
- $6$
- E)
- $\infty$

27.  $\prod_{k=1}^n 2^k = 1024 \quad n \in \mathbb{Z}^+ \Rightarrow n = ?$

- A)
- $256$
- B)
- $64$
- C)
- $32$
- D)
- $9$
- E)
- $4$

28.

$$A = \begin{pmatrix} 4 & 0 & 0 \\ 0 & 4 & 0 \\ 0 & 0 & 4 \end{pmatrix},$$

$$B = \begin{pmatrix} \frac{1}{32} & 0 & 0 \\ 0 & \frac{1}{32} & 0 \\ 0 & 0 & \frac{1}{32} \end{pmatrix}$$

$$\Rightarrow B^{-1}, A^{-1} = ?$$

- A)
- $2^{-3}I_3$
- B)
- $2^{-2}I_3$
- C)
- $2I_3$
- 
- D)
- $2^2I_3$
- E)
- $2^3I_3$



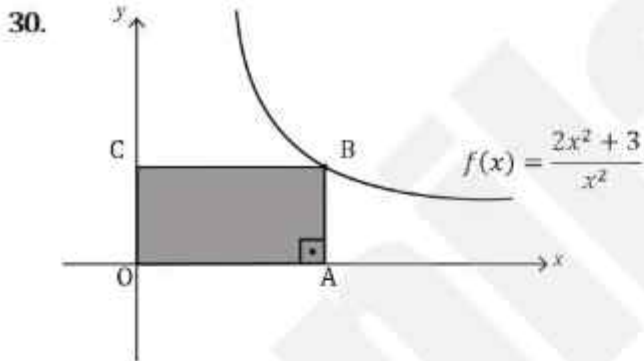


29.  $\sum_{n=0}^{\infty} \left(\frac{1}{2}\right)^n = ?$

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

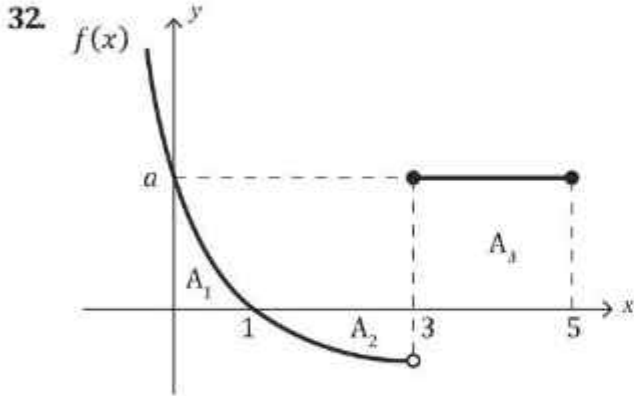
31.  $\left. \begin{aligned} h(x) &= (f \circ g)(-3x) \\ g(3) &= g'(3) = 2 \\ f'(2) &= 4 \end{aligned} \right\} \Rightarrow h'(-1) = ?$

- A) -24    B) -12    C) 8    D) 12    E) 24



$[OA] \parallel [CB]$ ;  $\min(A(OABC)) = ?$

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

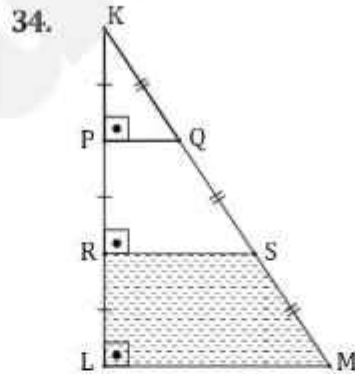
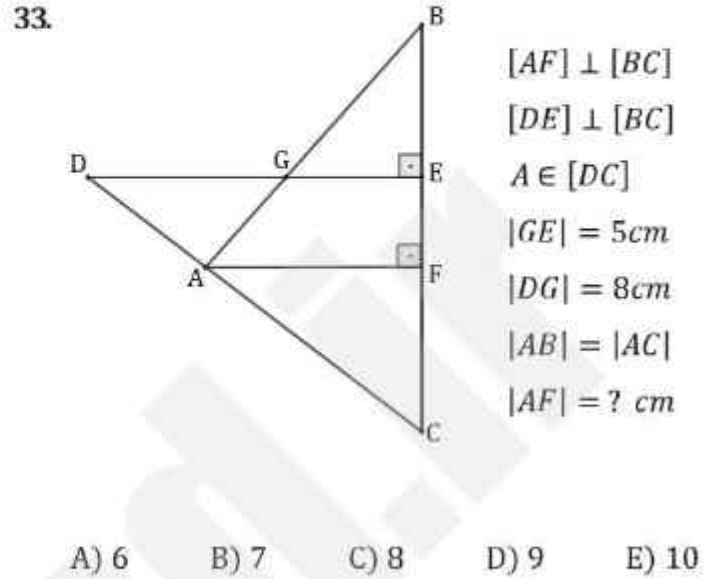


$$\frac{4A_1 - A_3}{2} = 2A_2$$

$$\int_0^5 f(x) = 10$$

$a = ?$

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



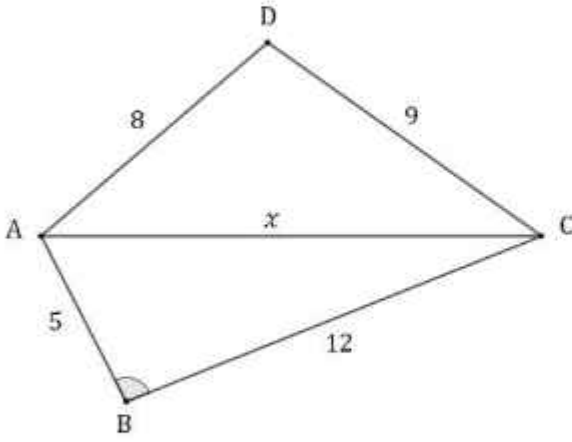
$$|KP| = |PR| = |RL|$$

$$|KQ| = |QS| = |SM|$$

$$A(KPQ) = 7 \text{ cm}^2 \Rightarrow A(RLMS) = ? \text{ cm}^2$$

- A) 21    B) 25    C) 32    D) 35    E) 42

35.

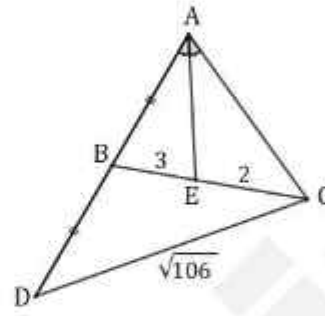


ABCD dörtgeninde  $x \in \mathbb{Z}^+$ ,  $m(\widehat{ABC}) > 90^\circ$  ise  $x$ 'in alabileceği farklı tamsayı değerleri toplamı kaçtır?

If  $x \in \mathbb{Z}^+$ ,  $m(\widehat{ABC}) > 90^\circ$  in the quadrilateral ABCD, what is the sum of the different integers  $x$  value could be?

- A) 58    B) 50    C) 45    D) 35    E) 34

36.



$$m(\widehat{BAE}) = m(\widehat{CAE})$$

$$|AB| = |BD|$$

$$|BE| = 3 \text{ cm}$$

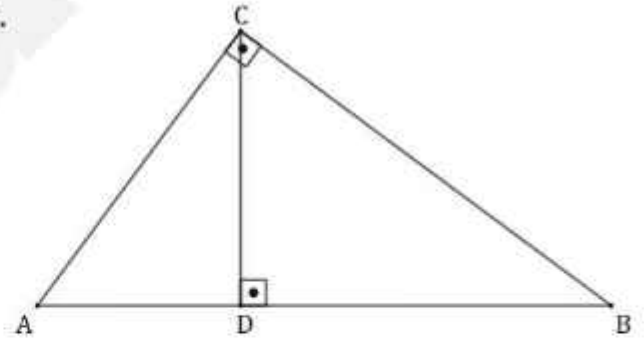
$$|EC| = 2 \text{ cm}$$

$$|DC| = \sqrt{106} \text{ cm}$$

$$|AE| = ? \text{ cm}$$

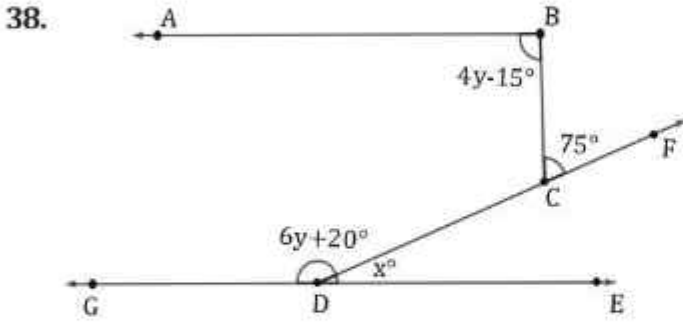
- A)  $2\sqrt{2}$     B) 3    C)  $3\sqrt{2}$     D) 4    E)  $4\sqrt{2}$

37.



$$|AC| = 6 \text{ cm}, |AB| = 10 \text{ cm} \Rightarrow |CD| = ? \text{ cm}$$

- A) 4    B) 4.8    C) 5.2    D) 7    E) 9



$[BA // GE$

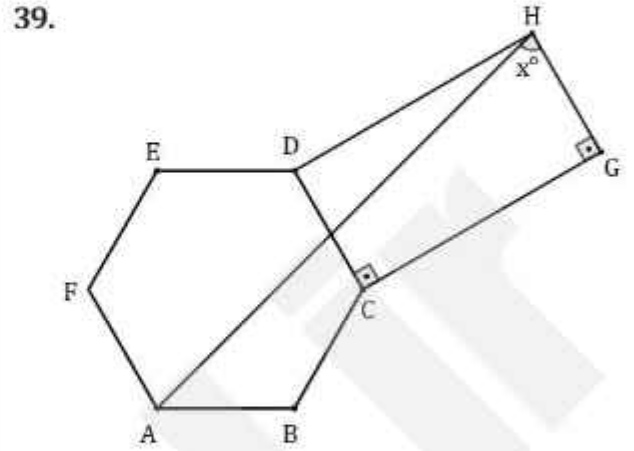
$C \in [DF$

$$m(\widehat{ABC}) = 4y - 15^\circ, \quad m(\widehat{GDF}) = 6y + 20^\circ$$

$$m(\widehat{BCF}) = 75^\circ$$

$$m(\widehat{FDE}) = x = ?$$

- A) 5    B) 10    C) 25    D) 30    E) 35

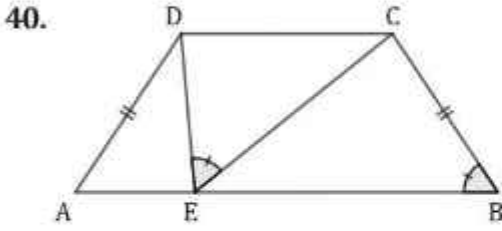


$$|AB| = |BC| = |CD| = |DE| = |EF| = |FA| = |GH|,$$

$$|CG| = |DH|, \quad 2|BC| = |CG|$$

$$x = ?$$

- A) 80    B) 75    C) 70    D) 65    E) 60



$$[AB] \parallel [DC]$$

$$m(\widehat{DEC}) = m(\widehat{ABC})$$

$$|AD| = |BC|$$

$$|AE| = 2 \text{ cm}, |EB| = 12 \text{ cm}$$

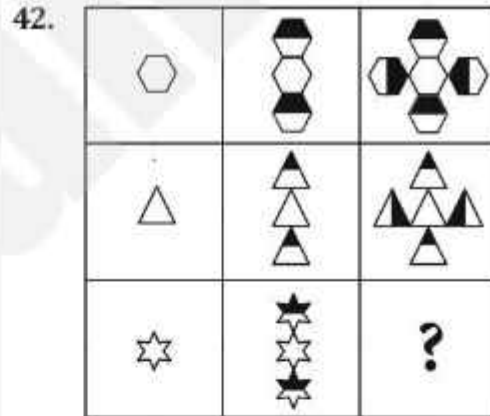
$$|AD| = ? \text{ cm}$$






- A)  $2\sqrt{6}$    B) 5   C)  $3\sqrt{3}$    D) 6   E)  $4\sqrt{3}$

41. 
$$\begin{array}{r} AB \\ \times C5 \\ \hline BED \\ + EB6 \\ \hline EB8ED \end{array}$$
 Yandaki çarpma işleminde hata yapılmıştır. Buna göre,  
There has been an error in the multiplication given aside.  
According to this,

$$E^D + A.C + B = ?$$

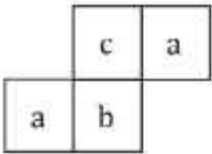
- A) 12   B) 13   C) 14   D) 15   E) 16



- A)    B)    C) 
- D)    E) 

43.

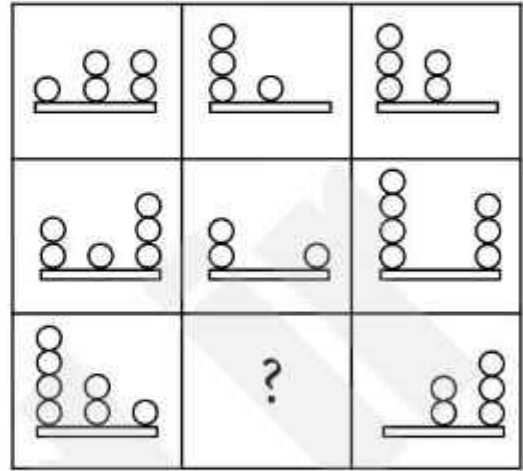
3	5	4	3	0	2	-2
1	2	5	-1	-1	9	4
4	9	-1	-1	3	3	2
-1	9	3	3	1	9	4
4	3	4	4	-1	2	4
1	4	2	0	3	2	9
6	-1	3	9	1	6	5

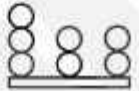
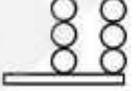
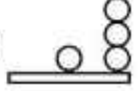
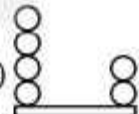



$(a \neq b \neq c)$   
 $a^c \cdot b + a = ?$

- A) 0    B) 6    C) 12    D) 24    E) 30

44.



- A)     B)     C) 
- D)     E) 

45. 0, 2, 8, 24, 64, 160, X  $\Rightarrow$  X = ?

- A) 184 B) 196 C) 288 D) 384 E) 448

46.



I.

II.



III.

$$\Rightarrow \begin{aligned} \square &= 10 \\ \triangle + \bullet + \circ &= ? \end{aligned}$$

- A) 25 B) 30 C) 35 D) 40 E) 50

47.




I.

II.

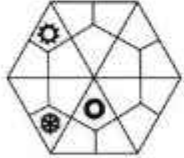
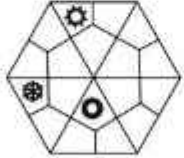



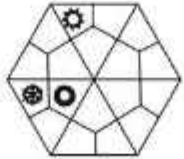
III.


- A) CCAA B) CCCA C) AAAC  
D) BBBA E) BBBC


48.  ?  
IV.

I. II. III. IV.




A)  B) 



C)  D) 

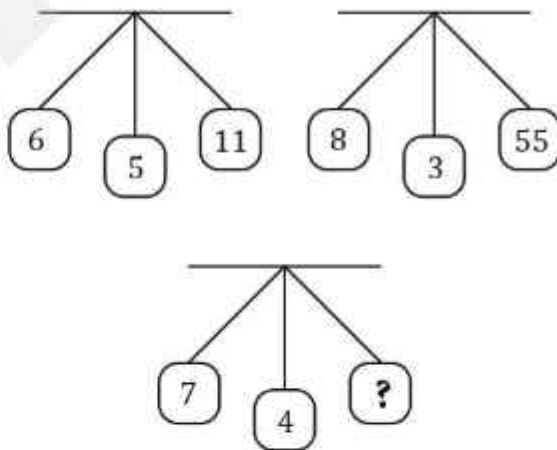
E) 

49.  ?

I. II. III. IV. V.

A)  B)  C) 

D)  E) 

50. 

- A) 11    B) 22    C) 33    D) 44    E) 66





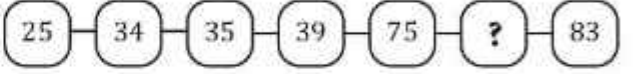
51.  = 25

 = 9

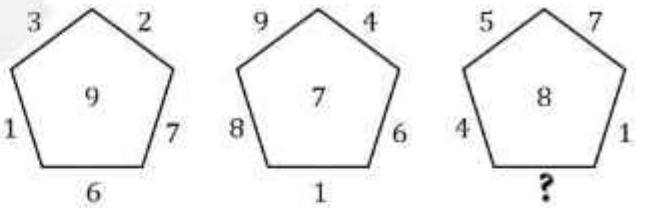
 = 20

 = ?

- A) 512   B) 201   C) 196   D) 36   E) 11




52. 


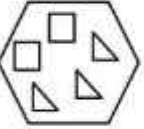

- A) 76   B) 77   C) 78   D) 79   E) 81




53. 

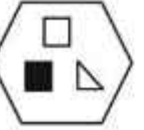

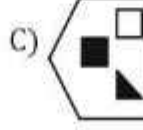
- A) 4   B) 5   C) 6   D) 7   E) 8



54.

I.  +  = 

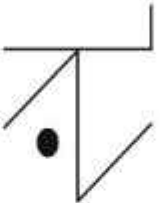

II.  +  = 

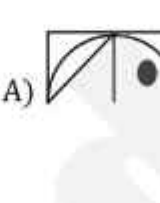
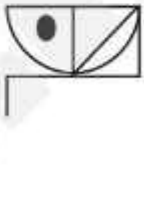
III.  +  = 

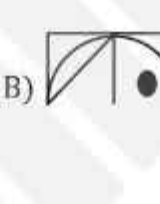
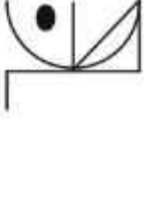
A)  B)  C) 

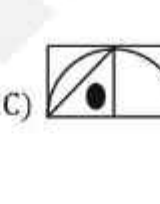
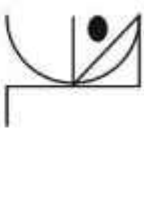
D)  E) 

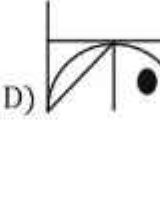

55.

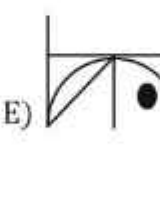
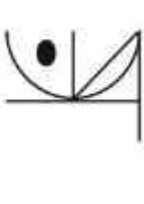
 +  = ..... ? + ..... ?

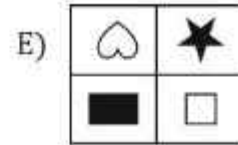
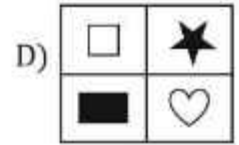
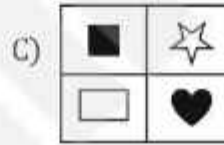
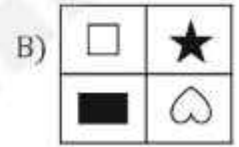
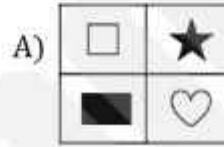
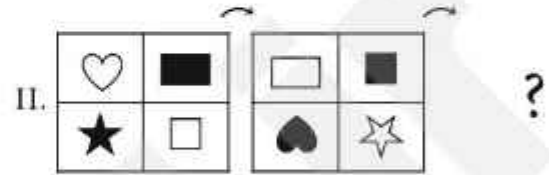
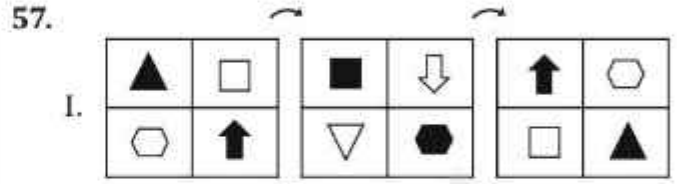
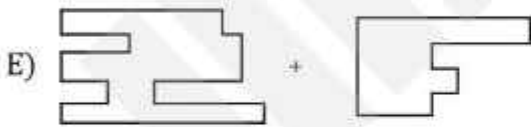
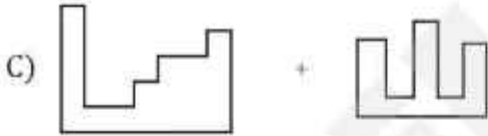
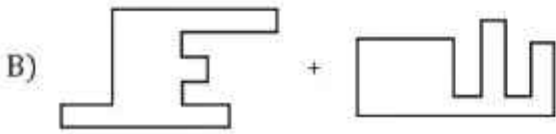
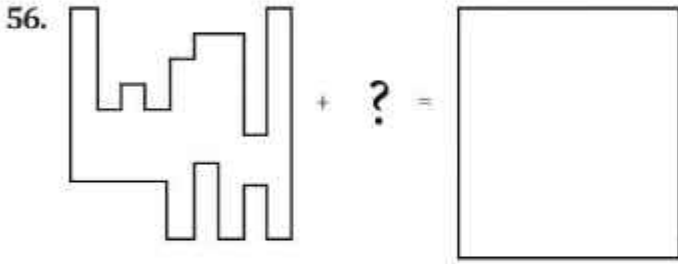
A)  + 

B)  + 

C)  + 

D)  + 

E)  + 





Kitapçık Kodu / Booklet Code: 200705

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## YURTDIŞINDAN VEYA YABANCI UYRUKLU ÖĞRENCİ SINAVI

EXAMINATION FOR FOREIGN OR OVERSEAS STUDENTS

ADI / NAME		KİTAPÇIKTÜRÜ <b>C</b>
SOYADI / SURNAME		
ADAY NO / APPLICANT NUMBER		
SINAV SALON NO EXAM ROOM NUMBER		

## TEMEL ÖĞRENME BECERİLERİ TESTİ

BASIC LEARNING SKILLS TEST

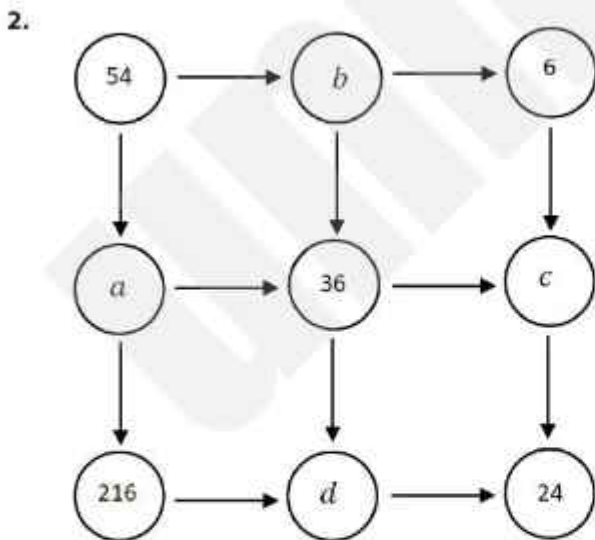
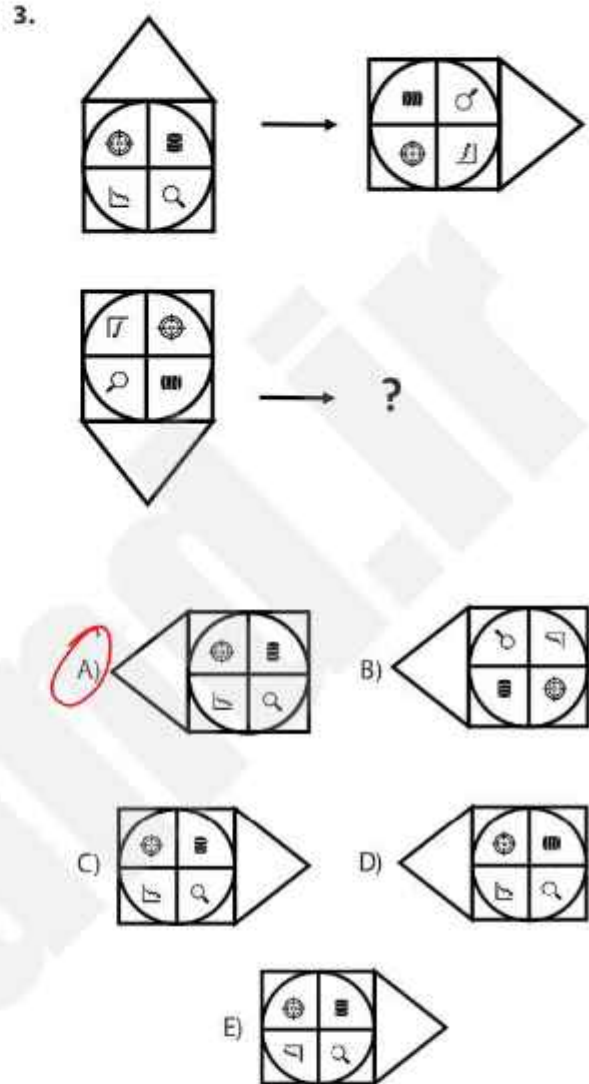
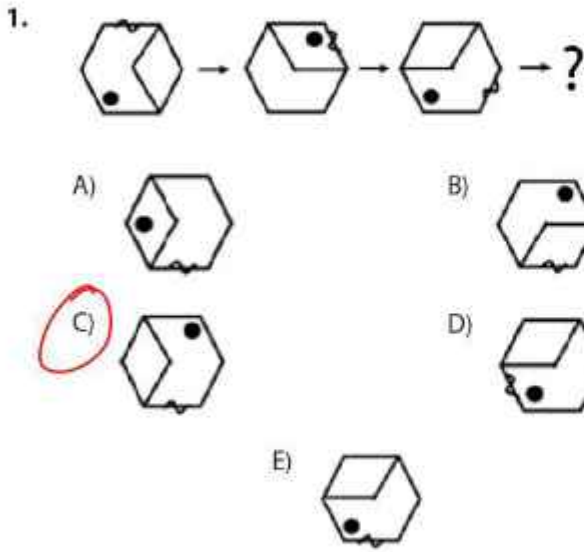
### GENEL AÇIKLAMA

- 1- Bu sınavdaki soruların nasıl cevaplanacağı, testlerin başında açıklanmıştır. Soruları cevaplamaya başlamadan önce bu açıklamaları dikkatle okuyunuz.
- 2- Bu testlerdeki her sorunun bir tek doğru cevabı vardır. Bir soru için birden çok cevap yeri işaretlenmişse, o soru yanlış cevaplanmış sayılacaktır.
- 3- Cevap kağıdında imzanızı ayrılmış alana atınız ve kitapçık türünü mutlaka kodlayınız. Kitapçık türünü kodlamadığınızda veya eksik kodladığınızda sınavınız değerlendirilmeye alınmayacaktır.
- 4- Cevaplarınızı koyu siyah ve yumuşak bir kurşun kalemle işaretleyiniz. İşaretlerinizi cevap yerinin dışına taşımayınız. Tükenmez kalem veya dolma kalem kullanmayınız.
- 5- Cevap kağıdınızı buruşturmayınız, katlamayınız ve üzerine gereksiz hiçbir işaret koymayınız.
- 6- Değiştirmek istediğiniz bir cevabı, yumuşak bir silgiyle, cevap kağıdını örselemeden, temizce siliniz ve yeni cevabınızı işaretlemeyi unutmayınız.
- 7- Bu testler puanlanırken, doğru cevaplarınızın sayısından yanlış cevaplarınızın sayısının dörtte biri düşülecek ve kalan sayı net cevap sayınız olacaktır.
- 8- Sınavda uyulacak diğer kurallar bu kitapçığın arka kapağında belirtilmiştir.

### GENERAL INSTRUCTIONS

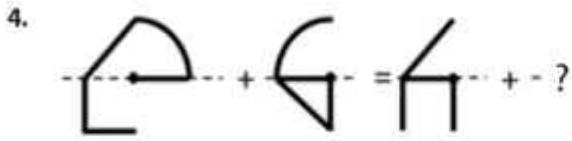
- 1- The exam instructions appear at the beginning of the tests. Please read them carefully before beginning.
- 2- In these tests there is only one correct answer for each question. If more than one alternative is marked for a question, that answer will automatically be considered wrong.
- 3- Sign the answer sheet on the specified field "Signature". It is extremely important that you mark the booklet group. An applicant's examination is declared invalid if she/he does not mark the booklet group.
- 4- You should use a soft, black pencil to mark the answer sheet. Completely fill in the circle for the answer you have chosen, but make sure your mark does not go beyond the borders of the circle. Do not use any kind of pen.
- 5- Keep the answer sheet flat and do not fold it. Do not make any unnecessary marks on it.
- 6- If you wish to change an answer, carefully erase it completely with a very soft eraser. Do not forget to mark your answer.
- 7- In the scoring of the tests, for every four incorrect answers, one correct answer will be deducted; the remaining will be your net answers.
- 8- The other regulations concerning the administration of the tests are mentioned at the back of the booklet.



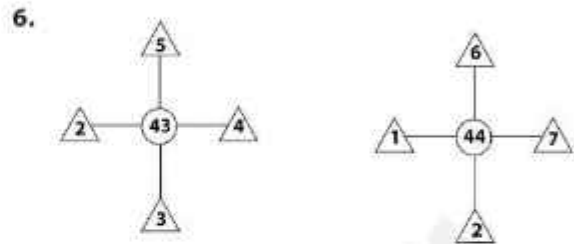


$a-b+c-d=?$

- A) 30      B) 35      C) 40  
D) 45      E) 50

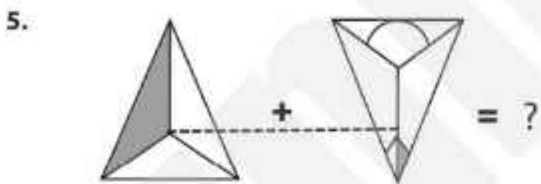


- A)
- B)
- C)
- D)
- E)



$x = ?$

- A) 42      B) 46      C) 52  
D) 112      E) 352



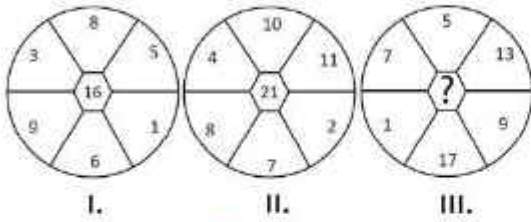
- A)
- B)
- C)
- D)
- E)

7.  $123 \rightarrow 4$   
 $234 \rightarrow 12$   
 $345 \rightarrow 86$   
 $426 \rightarrow X$

$X = ?$

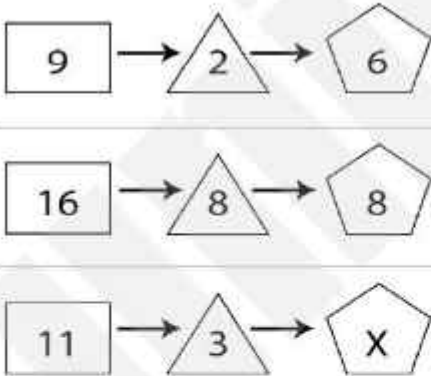
- A) 92      B) 72      C) 60  
D) 22      E) 16

8.



- A) 24    **B) 26**    C) 28  
D) 30    E) 32

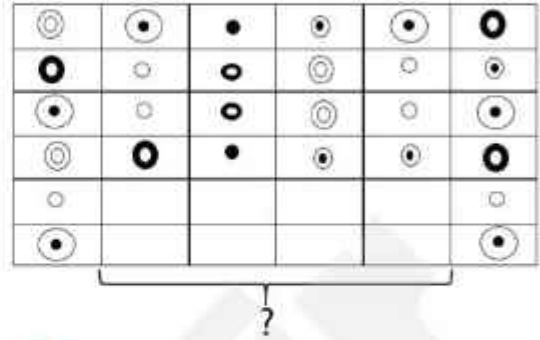
9.



X = ?

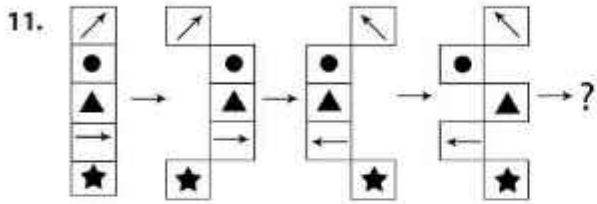
- A) 5    B) 6    **C) 7**  
D) 8    E) 9






10.

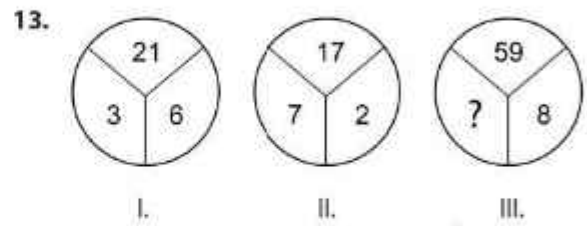


- A)**
- B)
- C)
- D)
- E)

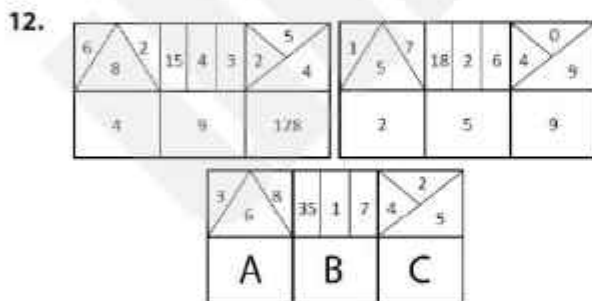




- A) 
- B) 
- C) 
- D) 
- E) 



- I. II. III.
- A) 6 B) 7 C) 8
- D) 9 E) 10



$C - (A+B) = ?$

- A) 40 B) 45 C) 56
- D) 63 E) 70

14.

- A) B) C) D) E)

16.

- x = ?
- A) 60      B) 70      C) 80  
D) 90      E) 100

15.

+	▲	▲▲	○△
●		○○○○	▲▲▲
○			
△	○○○○		

▲▲ = ▲ + ▲ ⇒ ● + △ = ?

- A) ▲      B) ○○  
C) ○▲      D) ○○○  
E) ▲▲○○

17.

u		
	ö	
		B

→

ö	u	
B		

→

		ö
B		n

→ ?

A)

u		
	ö	
		B

B)

u		
	ö	
		B

C)

u		
	ö	
		B

D)

ö	u	
		B

E)

		u
	ö	
B		

18.

△	δ	♣	●	◇	∅	♠
♠	◇	△	δ	♠	♣	◇
δ	◇	●	△	∅	δ	δ
♣	∅	∅	●	△	◇	∅
♣	◇	♠	△	♠	◇	△
δ	●	◇	∅	♠	♣	♠
△	●	δ	♣	◇	δ	∅

A
A

→

C	B	C
---	---	---

B = ?

- A) ●                      B) δ
- C) ♣                        D) ◇
- E) ♠

19.

2		
1	40	5
3		

5		
4	28	7
0		

6		
2	1	3
-1		

-4		
3	?	0
2		

- A) 1                      B) 0                      C) -4
- D) -8                    E) -16

20.

8	12
4	
35	

7	6
2	
17	

5	18
3	
21	

9	8
1	
17	

10	25
?	
55	

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



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21.

+	a	b
a		4
b	4	

x	a	b
a		2
b	2	

$a^2 + b^2 = ?$

- A) 20    B) 16    **C) 12**  
 D) 8    E) 6

23.

	4	3	1	X
				4
		1	2	
		4		
3	5	Y		

$X \cdot Y = ?$

- A) 1    **B) 4**    C) 6  
 D) 8    E) 10

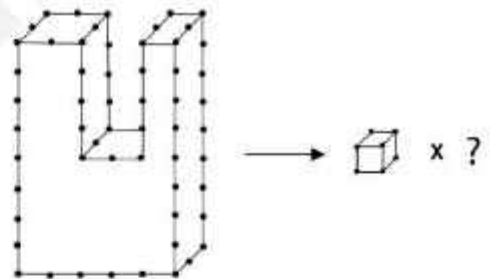
22.

◆	△	▽	●	◻	}	≡	{	75813
●	◻	◆	▽	△				13857
▽	△	●	◻	◆				35781
◻	◆	●	△	▽				81375

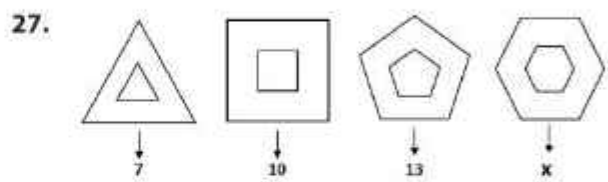
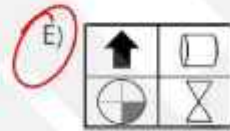
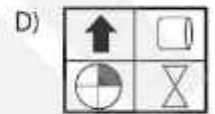
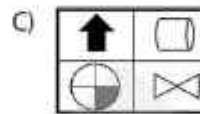
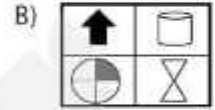
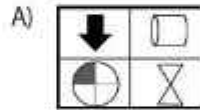
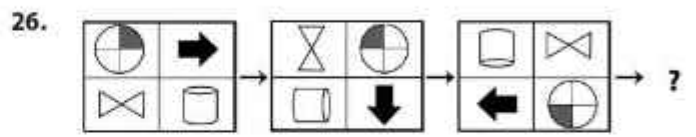
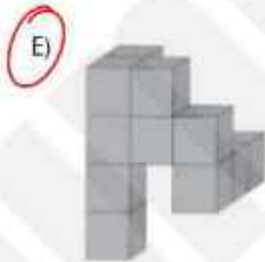
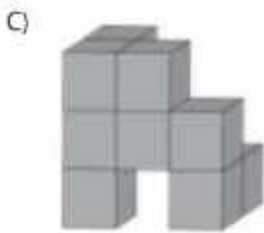
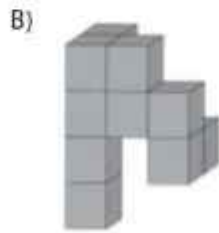
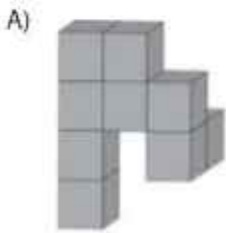
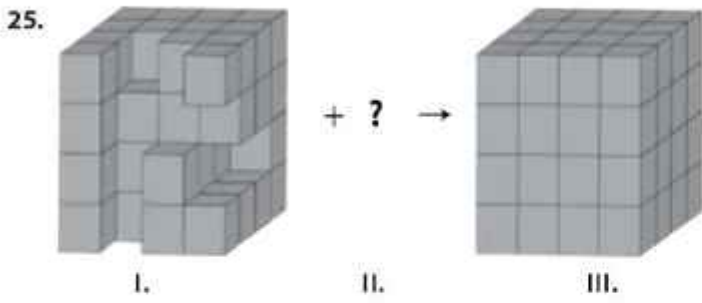
△ ▽ ◻ ◆ ● = ?

- A) 17358    B) 38175    C) 51837  
**D) 57138**    E) 73185

24.



- A) 60    **B) 64**    C) 68  
 D) 72    E) 76



$x = ?$

A) 15

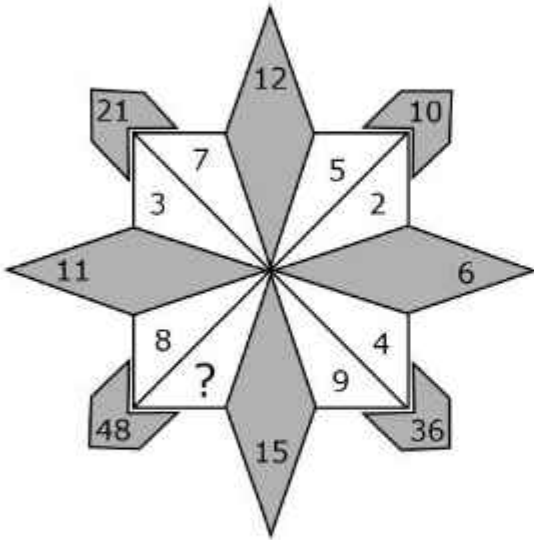
B) 16

C) 17

D) 18

E) 19

28.



- A) 5    B) 6    C) 7  
D) 8    E) 9

30.

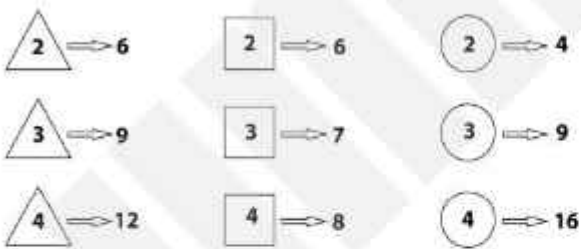
+	a	b	c
a			b+7
b	c-5		
c			

x	a	b	c
a			3a
b			
c			

b = ?

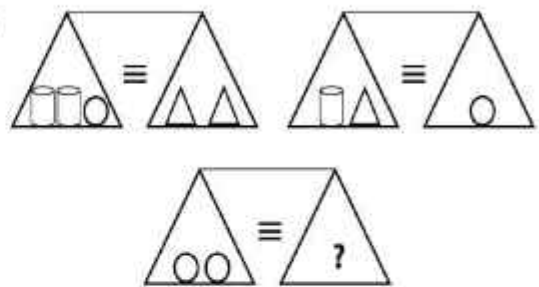
- A) -3    B) -2    C) 1  
D) 2    E) 3

29.



- A) 27    B) 361    C) 769  
D) 1090    E) 3125

31.

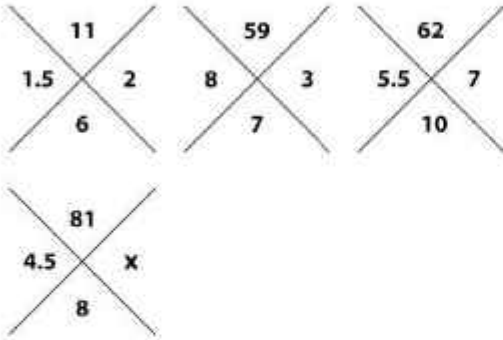


- A)  $\triangle$   $\text{cylinder}$     B)  $\triangle \triangle$   
C)  $\triangle \triangle \text{cylinder}$     D)  $\text{cylinder} \text{cylinder} \triangle$   
E)  $\triangle \triangle \text{cylinder} \text{cylinder}$



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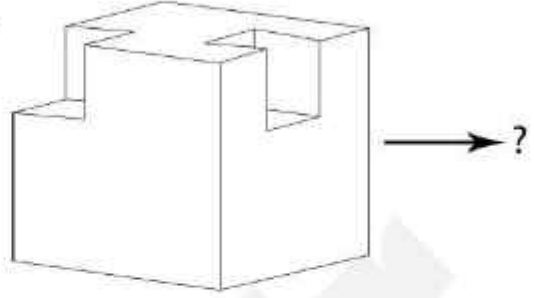
32.



x = ?

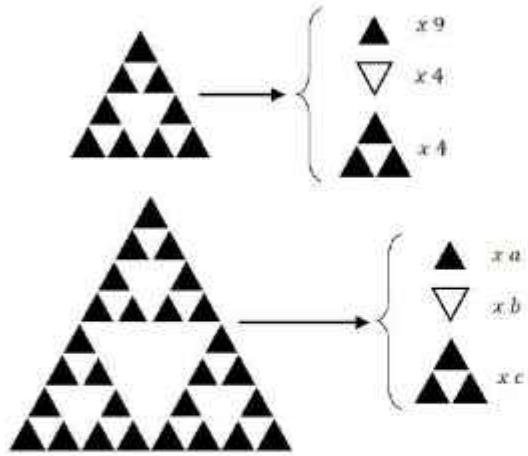
- A) 45
- B) 48
- C) 49
- D) 50
- E) 91

33.



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

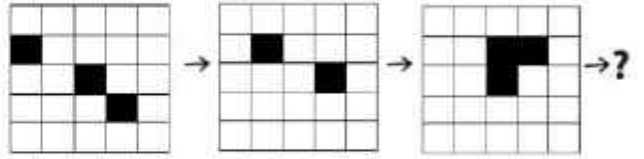
34.



$a+b+c = ?$

- A) 34      B) 35      C) 51  
 D) 53      E) 68

36.



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

35.

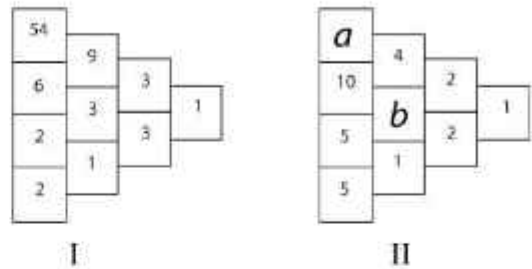
X	a	b	c	d
a		6.d		
b				
c	3.a		9.a	12
d				

$axb = a.b$   
 $a, b, c, d \in \mathbb{R}^+$

$a+b+c+d = ?$

- A) 24      B) 25      C) 27  
 D) 28      E) 32

37.

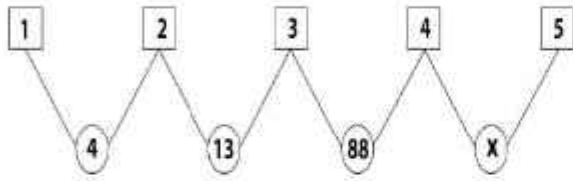


$a+b = ?$

- A) 30      B) 32      C) 36  
 D) 40      E) 42



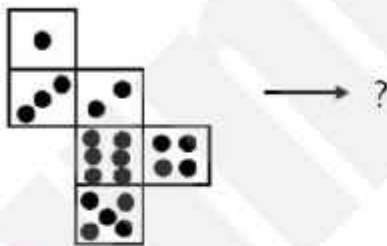
38.



$x = ?$

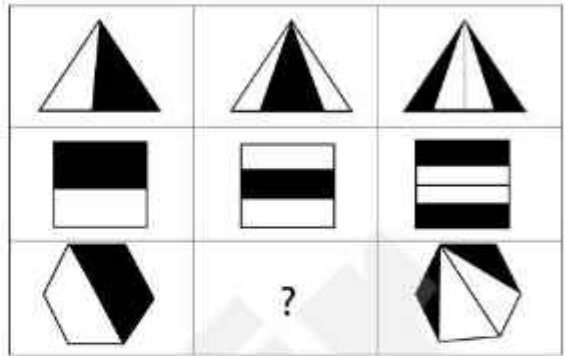
- A) 1033    B) 789    C) 421  
D) 367    E) 102

39.



- A)    B)   
C)    D)   
E)

40.

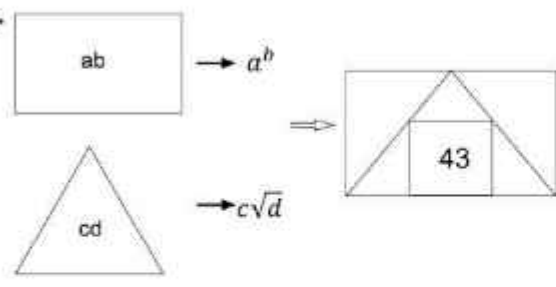


- A)    B)   
C)    D)   
E)

41.  $\frac{256^{0.125} + 9^{0.50}}{25^{0.75}} = ?$

- A)  $5\sqrt{5}$     B)  $\sqrt{5}$     C)  $\frac{\sqrt{5}}{5}$    
D)  $\sqrt[3]{25}$     E)  $\frac{\sqrt[3]{5}}{5}$



42.  = ?

A) 1      B)  $\sqrt{2}$       C) 2  
D) 4      E) 8

44. 
$$\left. \begin{aligned} ax - by - cz &= \frac{1}{6} \\ a + b + c &= 30 \\ x \cdot y \cdot z &= 2 \end{aligned} \right\} xy + yz + xz = ?$$

A) 60      B) 120      C) 180  
D) 360      E) 480

43.  $x, y \in \mathbb{Z}^+$   
$$\frac{1}{x-5} + \frac{1}{12-2y} = 1$$
  
 $x + y = ?$

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

45.  $f(x) = \log_5(x - 2) \Rightarrow f^{-1}(2) = ?$

A) 18      B) 21      C) 24  
D) 27      E) 30



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46.  $x - y - z = 5$   
 $2y + 3x + z = 16$   
 $y - 2x + 2z = 9$   
 $x = ?$   
A) 30      B) 15      C) 10  
D) 5      E) 0

48.  $P(x) = -3x^3 + 4x^2 - ax + 6$   
 $P(2) = -4$   
 $P(-1) = ?$   
A) 2      B) 4      C) 10  
D) 14      E) 17

47. 
$$\begin{array}{r|l} x^4 - x^3 + 3x^2 + 5 & x^2 - 1 \\ \hline & A(x) \\ \hline & ax + b \end{array}$$
  
 $a - b = ?$   
A) -10      B) -9      C) -1  
D) 9      E) 10

49.  $\frac{P(x+3)}{Q(2x-1)} = -x^3 + 4x + 9$   
 $Q(3) = 2$   
 $P(5) = ?$   
A) -18      B) -9      C) 9  
D) 18      E) 27



50.  $(1 - i)^{10} = ?$

- A)  $-32i$       B)  $1 - 16i$       C)  $16i$   
D)  $10 + 8i$       E)  $10i$

52.  $\frac{\sqrt[3]{125^{2x+3y}}}{\sqrt[4]{25^{4x+8y}}} = 625$  ise  $y = ?$

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

51. 
$$\left. \begin{aligned} z_1 &= 2x + 4 + yi \\ z_2 &= 5x - 2 + (x + 1)i \\ z_1 &= z_2 \end{aligned} \right\} \Rightarrow y = ?$$

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

53.  $2^a \triangle 3^b = a.b + 2 \Rightarrow 16 \triangle 9 = ?$

- A) 146      B) 38      C) 34  
D) 14      E) 10





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58.  $\log_2 \frac{3x-2}{x+1} = 1 \Rightarrow x = ?$

- A) 2      B) 4      C) 6  
D) 8      E) 10

59.  $\left( \frac{2}{1-3\frac{1}{4}} - \frac{2+1\frac{1}{2}}{5} \right)^{-1} : \left( -1\frac{4}{5} \right) = ?$

- A)  $\frac{450}{143}$       B) 1      C)  $\frac{50}{143}$   
D)  $-\frac{50}{143}$       E) -1

60.  $\Delta, \textcircled{C}, \textcircled{R} \in \mathbb{Z}^+$

$\Delta, \textcircled{R} = 30$

$\textcircled{R}, \textcircled{C} = 45$

$\min(\Delta + \textcircled{C}) = ?$

- A) 2      B) 5      C) 15  
D) 60      E) 75

61.  $x, y \in \mathbb{Z}^+$

$x^2 + 6x - 6y - y^2 = 20$

$x + y = 4$

$x^2 - y^2 = ?$

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

