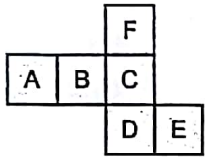
1.

$1 \Leftrightarrow 5$
$2 \Leftrightarrow 6$
$3 \Leftrightarrow 7$
$4 \Leftrightarrow 8$
$5 \Leftrightarrow ?$

A) 1 B) 5 C) 9 D) 13 E) 17

2.



Yukarıdaki açık şekil katlanarak küp haline getirildiğinde; C'nin karşısına hangisi gelir?

If the above figure is reformed to a cube, then which letter sits opposite to letter C? = ?

في الشكل المعطى مكعب ماهو الوجه المقابل للوجه الذي يحمل رمز C= ?

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

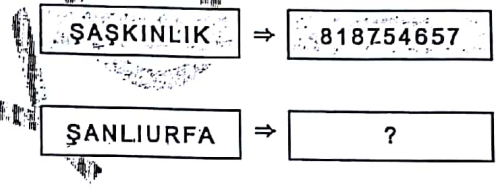
3.

$$a*b=\begin{cases} ab-a^b & , a<b \\ b^a-\frac{a}{b} & , a\geq b \end{cases}$$

$(2*3)*(1*1)=?$

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

4.

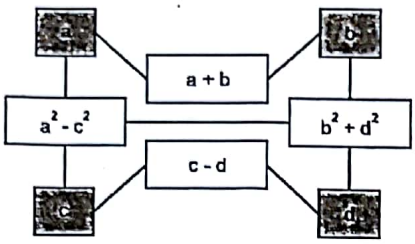


"?" hangisi olabilir?

Which one of the following may come in place of "?" ?

ماهي القيمة المناسبة ل "?"

A) 814457301 B) 814647231
C) 814440263 D) 814653921
E) 814634702

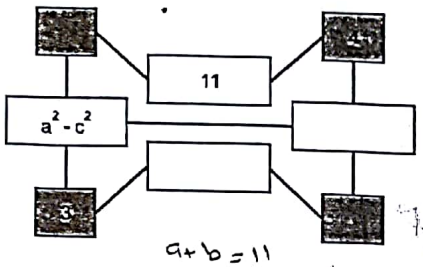


5.ve 6. Soruları örnekte verilen ilişkiye göre cevaplayınız.

Answer the questions 5. and 6. according to the relation given in the example.

اختر الاجابة المناسبة للسؤال (5-6)

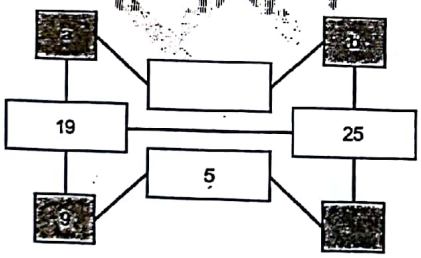
5.



$a^2 - c^2 = ?$

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

6.



$a, b > 0$, $a - b = ?$

A) 13 B) 11 C) 9 D) 7 E) 5

7.

+	x	y	z
x	y		
y		z	
z			x . y

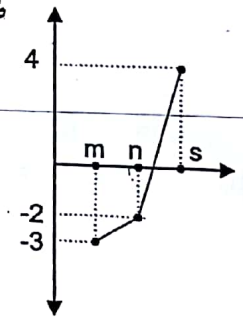
x, y, z pozitif sayılar olmak üzere; x . y . z = ?

if x, y, z are positive numbers, then what is the value of x.y.z = ?

اذا كان x, y, z اعداد موجبة بناء على ذلك ماهي قيمة x.y.z

A) 2^5 B) 2^6 C) 2^7 D) 2^8 E) 2^9

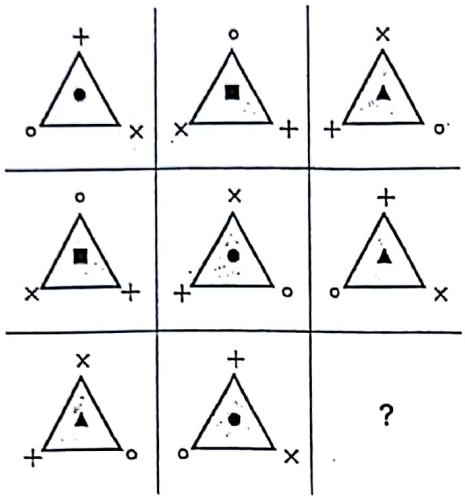
8.

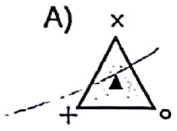


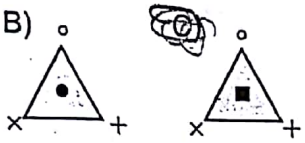
$2m + 3n - s = -32 \Rightarrow m + n + s = ?$

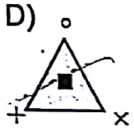
A) -4 B) -2 C) 0 D) 2 E) 4

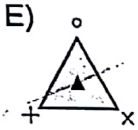
9.



A) 

B) 

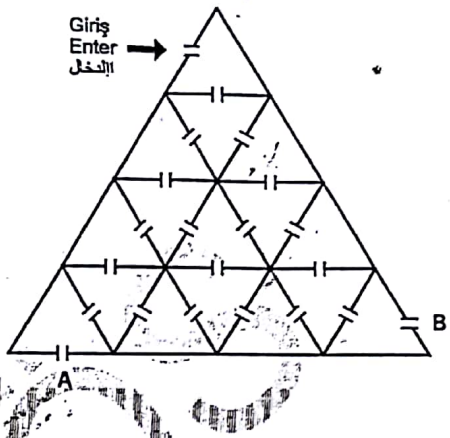
D) 

E) 

10. - 12. soruları aşağıdaki bilgilere göre cevaplayınız.

Answer the questions 10 - 12 according to the following information.

السؤال 10 - 12 يتم من خلال المعطيات التالية :



Yukarıdaki labirent 16 odadan oluşmaktadır. Oyun kuralları aşağıdaki gibidir:

- Oyuncu giriş kapısından başlayıp odalardan geçerek A veya B kapısından çıkmaktadır.
- Oyuncu, geçtiği her odada kaç puan varsa; o puanı almaktadır. Fakat kullandığı her kapı için oyuncudan 2 puan düşmektedir (giriş ve çıkış dahil).
- Her odadan en çok bir kez geçilmelidir.

The above labyrinth is composed of 16 rooms. The rules of the game are as follows:

- Player starts from the entrance door, passes from the rooms and go out from A or B.
- Player gets the points available in the room. But player loses 2 points for each door that is used (either for entrance or exit)
- Each room can be passed at most once.

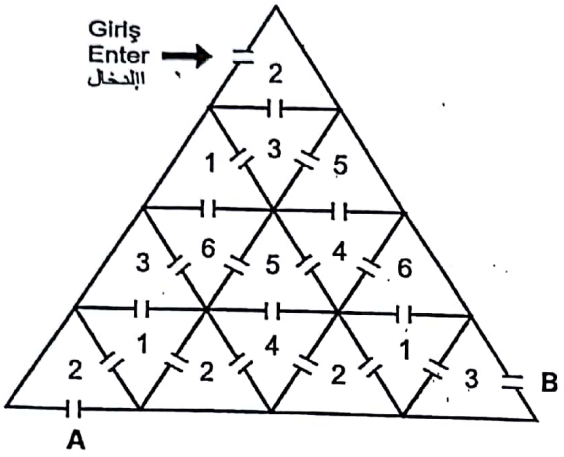
في الاعلى مخطط لمكتبة تحوي 16 غرفة , قاعدة اللعبة تكون بالشكل التالي :

يمكن للاعب الدخول من أي باب والخروج اما من الباب A او الباب B

اللعب خلال مروره بالغرف ياخذ العلامة التي يجدها في كل غرفة ,مع العلام ان العبور من كل باب يؤدي الى خسارة اللاعب 2 علامة (هذا الشرط يتضمن الدخول او الخروج)

لايمكن المرور من الغرفة اكثر من مرة واحدة

10.



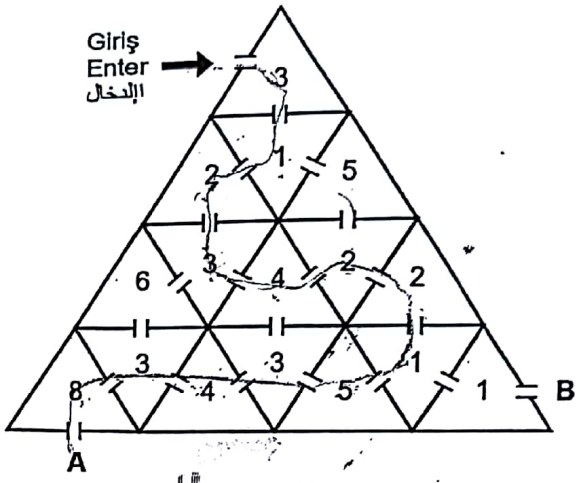
Giriş kapısından girip en kısa yoldan B kapısından çıkan oyuncu kaç puan toplar?

How many points does a player gets by using the shortest path from the entrance door to the exit door B ?

لاعب دخل من احد الابواب وخرج من الباب B بأقصر طريق , كم علامة سوف يجمع

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

11.



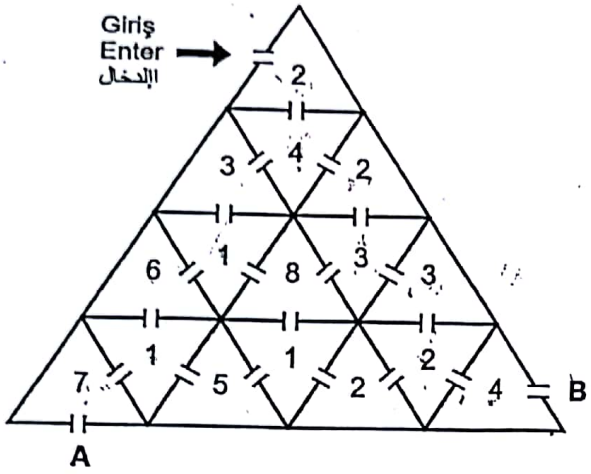
Bir oyuncu yukarıda verilen oyun kağıdında 13 odadan geçerek A kapısından çıkmaktadır. Kaç puan toplar?

A player passes through 13 rooms and finish the game by using the door A. How many points does the player get?

اذا كان اللاعب يستخدم المحطط في الاعلى ويمر من خلال 13 غرفة ويخرج من الباب A كم مجموع درجاته

A) 15 B) 13 C) 11 D) 9 E) 7

12.



En kısa yoldan gitmek koşulu ile giriş kapısından girip A kapısından çıkan oyuncunun topladığı puan m, B kapısından çıkan oyuncunun topladığı puan n olmak üzere;
m – n = ?

A player by using the shortest path from the entrance door to the door A gets m points , another player by using the shortest path from the entrance door to the door B gets n points.
What is m – n = ?

لاعب الذي يستخدم اقصر طريق للخروج من الباب A يحصل على
العلامة m والاعب الذي يستخدم اقصر طريق للخروجمن الباب B يحصل
على العلامة n ماهي قيمة m - n = ?

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

13.

I. $2 \square 3 = 3$
II. $3 \square 4 = 6$
III. $4 \square 5 = 10$

"□" işlemi tanımlanıyor. Buna göre;

IV. $5 \square 6 = ?$

Operation "□" is defined above. Then what is the value of $5 \square 6 = ?$

ماهو الجواب المناسب للعملية "□" ؟ $5 \square 6 = ?$

A) 12 B) 14 C) 15 D) 16 E) 18

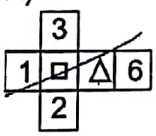
14.

Bir küpün farklı konumlardaki görünüşleri verilmiştir. Küpün açık şekli aşağıdakilerden hangisi olabilir?

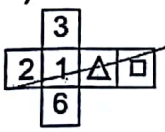
The appearance of a cube from different perspectives are given. Which one of the following can be the open form of this cube?

أي من الخيارات التالية هي الشكل الصحيح لاوجه المكعب المعطى

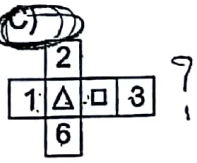
A)



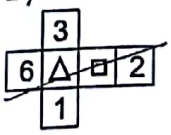
B)



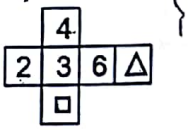
C)



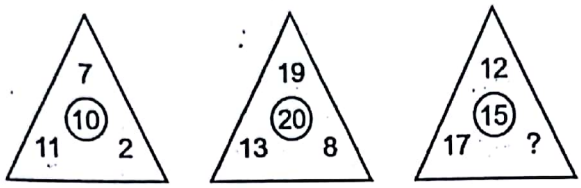
D)



E)

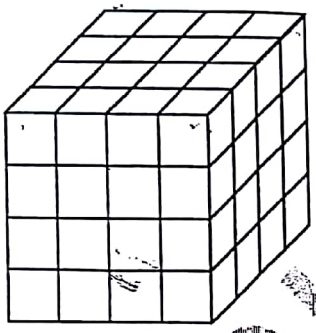


15.



A) 0 B) 1 C) 2 D) 3 E) 4

16.



Şekildeki küp birbirine eş 64 tane küçük küpten oluşmuştur. Oluşan büyük küpün tüm yüzeyleri maviye boyansın.

The cube in the figure is composed of 64 identical small cubes. All sides of the big cube is colored blue.

في الشكل يوجد مكعب تم تقسيمه الى 64 مكعب متساوي ثم تم طلاء وجوهه باللون الازرق

Üç yüzü boyalı kaç küçük küp olur?

What is the number of small cubes with three faces colored blue?

كم مكعب تظهر لدينا من خلال ثلاثة وجوة للمكعب

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

17. - 19. soruları aşağıdaki bilgilere göre cevaplayınız.

Answer the questions 17 – 19 according to the following information.

في الاسئلة 17. – 19. نتبع القاعدة

x, y, z ve t birer rakam olmak üzere * işlemi aşağıdaki şekilde tanımlanıyor.

The operation * is defined as follows where x, y, z and t are one digit numbers.

اذا كان x, y, z و t كل منهم ارقام اتمم الشكل التالي

$$\boxed{x}\boxed{y} * \boxed{z}\boxed{t} = x \cdot z - \frac{y}{2} - t^2$$

17.

$$\boxed{2}\boxed{4} * \boxed{5}\boxed{1} = ?$$

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

10 – 2 – 1 =

18.

$\boxed{4}\boxed{6} * \boxed{x}\boxed{2} = 9$ olduğuna göre x kaçtır?

If $\boxed{4}\boxed{6} * \boxed{x}\boxed{2} = 9$, then what is the value of x ?

بناء على ذلك ماهي قيمة x

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

4 x – 3 – 4 = 9

19.

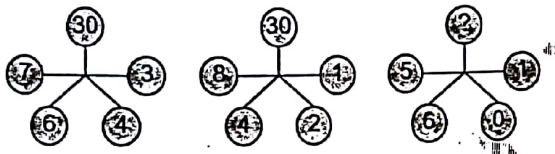
$\boxed{x}\boxed{4} * \boxed{y}\boxed{4} = 6$ olduğuna göre "x+y" nin en büyük değeri kaçtır?

If $\boxed{x}\boxed{4} * \boxed{y}\boxed{4} = 6$ then what is the largest value of x + y ?

بناء على ذلك ماهي اكبر قيمة ل x+y

A) 17 B) 16 C) 13 D) 11 E) 9

20.



Belirlenen kurala göre "?" yerine hangi sayı gelmelidir?

According to the rule, which number has to come in place of "?" ?

بناء على القاعدة المعطاة ماهي القيمة الصحيحة مكان الاشارة "?"

A) 30 B) 32 C) 34 D) 36 E) 38

21. - 23. soruları aşağıdaki bilgilere göre cevaplayınız.

A, B, C, D ve E sıfırdan farklı birer rakam olmak üzere; A + B = C + D + E koşulunu sağlayan beş basamaklı ABCDE sayıları oluşturuluyor.

Answer the questions 21 – 23 according to the following information.

A, B, C, D and E are one digit numbers different than zero.

Form the five digit numbers ABCDE such that A + B = C + D + E.

في الاسئلة من 21. - 23. اعطي الاجوبة بناء على المعلومات التالي

A + B = C + D + E ارقام تختلف عن الصفر وتحقق العلاقة

21.

Rakamları birbirinden farklı beş basamaklı en büyük ABCDE sayısı için D kaçtır?

Form the largest five digit number ABCDE whose digits are different then each other. What is the value of D in this number?

اذا كانت الارقام ABCDE اكبر مايمكن وتختلف عن بعضها البعض. ماهي قيمة للحرف D

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

22.

Rakamları birbirinden farklı 5 'e tam bölünebilen beş basamaklı en küçük ABCDE sayısının rakamları toplamı kaçtır?

Form the smallest five digit number ABCDE which is divisible by 5 and whose digits are different than each other. What is the sum of digist of this number?

اذا كانت الارقام المعطاة ABCDE اصغر ما يمكن وتقبل القسمة على خمسة ومختلفة عن بعضها البعض . ماهو مجموع هذه الارقام

A) 10 B) 20 C) 22 D) 24 E) 26

23.

Rakamları farklı 2 ile başlayan beş basamaklı en büyük ABCDE sayısının 10 ile bölümünden elde edilen kalan kaçtır?

Form the largest five digit number ABCDE with leading digit 2 and whose digits are different than each other. What is the remainder when this number is divided by 10 ?

اذا كانت الارقام مختلفة عن بعضها البعض واكبر مايمكن وكان الرقم الاول هو اثنان . ماهو باقي قسمة هذا الرقم على 10

A) 7 B) 6 C) 5 D) 3 E) 1

24.

Bir bilet kuyruğunda Ali 'den öncekilerin sayısı, Ali' den sonrakilerin sayısından 5 fazladır. Kuyrukta toplam 20 kişi olduğuna göre, Ali baştan kaçıncı sıradadır?

In a ticket queue, the number of predecesors (before Ali) of Ali is 5 more than the successors (after Ali) of Ali. Starting from the first one, what is the place of Ali if there are totally 20 people in the queue?

في طابور التذاكر حصل علي على بطاقة فكان الفرق مابين عدد الاشخاص قبله وعدد الاشخاص بعده هو خمسة . اذا علمت ان عدد الاشخاص كان هو 20 ماهو ترتيب علي

A) 17 B) 16 C) 15 D) 14 E) 13

25. ve 26. soruları, aşağıdaki örneğe göre cevaplayınız.

Answer the questions 25 and 26 according to the following example.

في الأسئلة 21. - 20. العثور على إجابات بناء على المثال التالي

Örnek: Example:

$3 \xrightarrow{x4} 12 \xrightarrow{+6} 18 \xrightarrow{+3} 6 \xrightarrow{-3} 3$

25.

$A \xrightarrow{+K} 9 \xrightarrow{xK} B \xrightarrow{-K} 56$

Yukarıdaki sayı dizisine göre; A kaçtır?

According to the above number sequence, what is the value of A ?

في السلسلة الموجودة في الاعلى ماهي قيمة الحرف A

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

26.

Başlangıç sayısı A = 8 , katsayısı K = 6 olan sayı dizisinde; iki toplama ve iki çarpma işlemi yapıldığına göre; dizinin son (beşinci) terimi en çok kaç olabilir?

Starting with A = 8 and K = 6 one performs two addition and two multiplaticion. What is the largest possible value of the last (fifth) term of the sequence?

اذا كانت السلسلة تبدا من قيمة A = 8 نقوم باستخدام العدد K = 6 بالجمع والضرب مرتين متتاليتين. ماهي اكبر قيمة للحد الخامس للسلسلة

A) 480 B) 540 C) 720 D) 800 E) 920

27.

TAKIM			
KEMAL	18183		26183
KETUM		15273	
TEKİL	16294		26354
TUTUM			

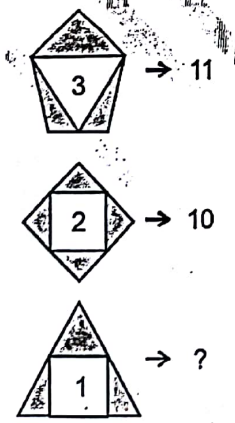
Yukarıdaki sözcüklerin harfleri birbirinden farklı birer rakamla gösterilip sağdaki sayılar elde edimiştir . Buna göre "TEKİL" kelimesi hangi sayıyla gösterilmektedir?

The numbers in the second group are obtained by replacing each of the letters with a number. Accordingly, which number corresponds to the word "TEKİL" =?

في الاعلى توجد مجموعة من الكلمات تقابلها مجموعة من الاعداد ماهو العدد الذي يقابل الكلمة TEKİL

A) 18183 B) 26183 C) 15273 D) 16294 E) 26354

28.

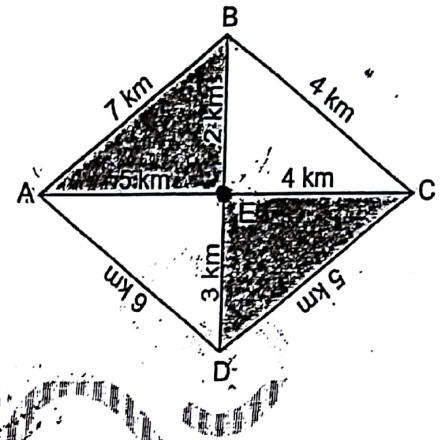


A) 8 B) 7 C) 6 D) 5 E) 4

29. - 30. soruları aşağıdaki bilgilere göre cevaplayınız.

Answer the questions 29. – 30. according to the following information.

في الاسئلة 29. -30. بناء على المعلومات التالية اوجد الجواب



Yukarıdaki krokide; A, B, C, D ve E kentleri arasındaki uzaklıklar gösterilmiştir.

In the above diagram, the distances between the cities A, B, C, D and E are shown.

في الشكل الموجود تعطى المسافة مابين المدن A, B, C, D, E

29.

B'den D'ye en kısa mesafe kaç km'dir?

What is the shortest distance from B to D ?

ماهي المسافة الاقصر من B الى D

A) 5 B) 9 C) 13 D) 18 E) 20

30.

D'den C'ye; her noktadan en çok bir kez geçmek koşulu ile en uzun mesafe kaç km'dir?

What is the longest distance from D to C by passing from each point at most once ?

ماهي اطول مسافة يمكن ان تكون للانتقال من المدينة D الى المدينة C بشرط انه لايمكن المرور بمدينة واحدة اكثر من مرة

A) 20 B) 19 C) 18 D) 17 E) 16

31.

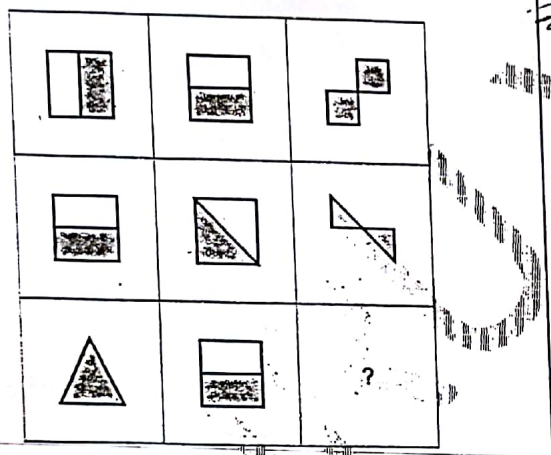
2	3	1	→ 7
3	2	1	→ 8
5	3	3	→ 122
4	3	5	→ x

⇒ x = ?

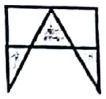
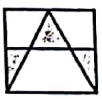
A) 64 B) 69 C) 60 D) 59 E) 76

8 - 1
27 - 19
125 - 3

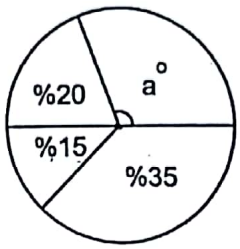
32.



A)  B)  C) 

D)  E) 

33.



⇒ a ° = ?

A) 96 B) 102 C) 108 D) 114 E) 120

360
36 = 10%
36 = 10%
72 = 50%
180 60%
72
252
144
36
180

34.

$A = \begin{bmatrix} 2 & 2 \\ 4 & 2 \end{bmatrix}$ matrisi veriliyor.

$A = B + C$, $B^T = B$, $C^T = -C$ olmak üzere; $B - C = ?$

(Burada "T", matrisin transpozunu göstermektedir.)

The matrix $A = \begin{bmatrix} 2 & 2 \\ 4 & 2 \end{bmatrix}$ is given.

If $A = B + C$, $B^T = B$, $C^T = -C$

then what is the matrix $B - C = ?$

(Here "T" stands for the transpose of a matrix.)

لتكن المصفوفة $A = \begin{bmatrix} 2 & 2 \\ 4 & 2 \end{bmatrix}$

$A = B + C$, $B^T = B$, $C^T = -C$

(T يعني منقول المصفوفة)

بناء على ذلك ماهي قيمة $B - C = ?$

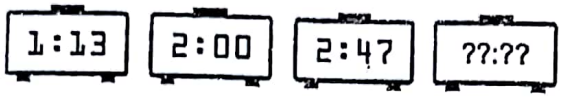
A) $\begin{bmatrix} 2 & 5 \\ 1 & 2 \end{bmatrix}$ B) $\begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix}$ C) $\begin{bmatrix} 2 & 4 \\ 2 & 2 \end{bmatrix}$

D) $\begin{bmatrix} 0 & -2 \\ 2 & 0 \end{bmatrix}$ E) $\begin{bmatrix} 2 & 3 \\ 3 & 2 \end{bmatrix}$

$\begin{bmatrix} 2 & 2 \\ 4 & 2 \end{bmatrix} = \begin{bmatrix} B & 0 \\ 0 & B \end{bmatrix} + \begin{bmatrix} C & 0 \\ 0 & C \end{bmatrix}$

B + C = 2

35.



A) 3:34 B) 3:41 C) 3:47 D) 4:01 E) 4:12

36.

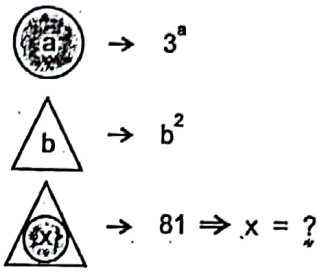
15 metre derinliğe sahip kuyuya düşen bir kurbağa ilk gün 5 metre çıkmakta, ertesi gün 4 metre düşmektedir. Bu şekilde devam ederse kaç günde kuyudan çıkar?

A frog in a 15 meters deep well. One day it jumps 5 meters up, another day it goes 4 meters down. Continuing in this fashion, in how many days it comes out of the well?

ضفدع وقع في بئر بعمق 15 متر. يصعد في اليوم الاول للأعلى 5 امتار وتعود للأسفل في اليوم التالي مسافة 4 امتار. كم يوم تحتاج للخروج من البئر.

A) 30 B) 27 C) 25 D) 23 E) 21

37.



A) 0 B) 2 C) 4 D) 6 E) 8

38.

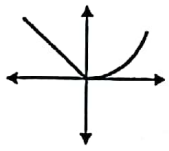
$$f(x)=\begin{cases}-x^2 & , x<0\\ |x| & , x\geq 0\end{cases}$$

fonksiyonunun grafiği aşağıdakilerden hangisidir?

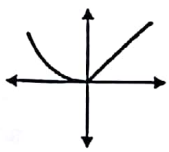
Which one of the following is the graph of the function f(x)?

أي من الخطوط البيانية التالية هو الخط البياني الصحيح للتابع

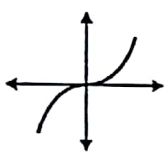
A)



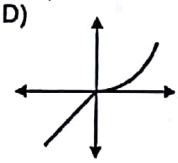
B)



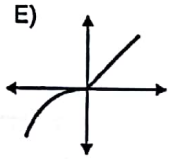
C)



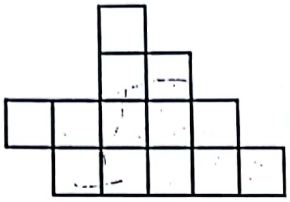
D)



E)



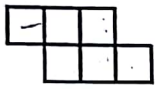
39.

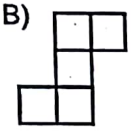


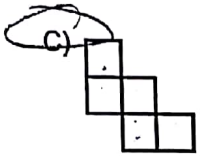
Yukarıdaki şeklin içinde aşağıdakilerden hangisi yoktur?

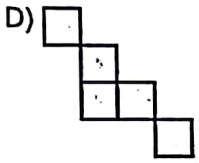
Wich one of the following does not contained in the above figure?

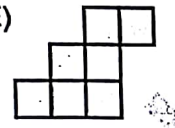
في الاشكال التالية أي منها هو الشكل الخاطئ او المختلف

A) 

B) 

C) 

D) 

E) 

40.

 → $3x$  → $x^4 \Rightarrow$

 → 48  → 81

Buna göre; a+b'nin alabileceği en küçük değeri nedir?

According to the above diagram, what is the least possible value of a+b ?

ليكن بناء على ذلك ماهي اصغر قيمة يمكن ان تأخذها قيمة a+b

A) -3 B) -2 C) 0 D) 2 E) 3

$3a^4 = 48$

$a = 2$

$(3b)^4 = 81$

$b = 1$

YABANCI UYRUKLU ÖĞRENCİ SINAVI

THE ENTRANCE EXAMINATION FOR FOREIGN STUDENTS

MATEMATİK TESTİ
MATHEMATICS TEST

1. Bu test sizin somut düşünme gücünüzü ölçmek için hazırlanmıştır.
2. Bu testte 40 soru vardır.
3. Bu testteki soruların cevapları, cevap kâğıdının **Matematik Testi** için ayrılmış olan kısmına işaretlenecektir.
4. Cevaplamaya istediğiniz sorudan başlayabilirsiniz. Cevaplarınızı işaretlerken soru kitapçığındaki soru numarası ile cevap kâğıdındaki cevap numarasının aynı olmasına dikkat ediniz.

1. This test is designed to measure your concrete reasoning.
2. This test consists of 40 questions.
3. Please use the appropriate part of the answer sheet for this section of the test, namely the Mathematics Test section.
4. You can start with any question you want. But, when marking your answers, make sure that the answer number on the answer sheet is the same as the question number in the test booklet.

NOT: ONDALIK KESİRLERİ GÖSTERMEK İÇİN TÜRKÇE METİNLERDE VİRGÜL (,) KULLANILIR.

NOTE: DECIMALS ARE INDICATED BY A COMMA (,) IN TURKISH.

1.

$a + b = 3$ ve $x + y = 2$

$\Rightarrow ax + x + ay + y + bx + by = ?$

A) 4 B) 6 C) 8 D) 10 E) 12

$a(x+y) + x + y + b(x+y)$

$x+y[a+1+b)$

$2 \cdot 4 = 8$

2.

$a = \left(\frac{1}{5}\right)^{-\frac{1}{4}}$, $b = \left(\frac{1}{4}\right)^{-\frac{1}{5}}$, $c = \left(\frac{1}{3}\right)^{-\frac{1}{6}}$ sayılarının küçükten büyüğe doğru sıralaması aşağıdakilerden hangisidir?

What is the correct order of the above numbers when they are ordered from the smallest to the largest?

أي من التالي هو الترتيب الصحيح من الصغير الى الكبير للاعداد

A) $c < a < b$
B) $a < b < c$
C) $b < c < a$
D) $c < b < a$
E) $b < c < a$

$a = \sqrt[4]{5} > 1$ $5^{\frac{1}{4}}$

$b = \sqrt[5]{4}$ $4^{\frac{1}{5}}$ $3^{\frac{1}{6}}$

$c = \sqrt[6]{3}$

$a^{120} = 5^{30}$ $a > b > c$

$b = 4^{24}$

$c = 3^{20}$

3.

$\left(2^x - 1\right)\left(2^x + 1\right)\left(2^{2x} + 1\right)\left(2^{4x} + 1\right) = 1023 \Rightarrow x = ?$

A) 8 B) 7 C) 6 D) $\frac{4}{5}$ E) $\frac{5}{4}$

$2^{2N} - 1$

$2^{4N} - 1$

$2^{8N} - 1 = 1023$

$2^{8N} = 1024$

$8N = 10$

$N = \frac{5}{4}$

64 | 2
128 | 32
0 | 16
8
4

$2^3 \cdot 2^3$

4.

$x, y \in \mathbb{Z}$,

$\left.\begin{aligned} 2x^3 - 5xy^2 &= 4a \\ 5y^3 - 2x^2y &= 9a \end{aligned}\right\} \Rightarrow \frac{4x - y}{-4y + x} = ?$

A) $\frac{16}{9}$ B) $-\frac{5}{8}$ C) $\frac{5}{8}$ D) $-\frac{8}{5}$ E) $\frac{8}{5}$

$y(5y^2 - 2x^2) = 9a$

$x(2x^2 - 5y^2) = 4a$

$-\frac{y}{x} = \frac{9}{5}$

$-4y = 9x$

$\frac{-16 - 9}{-36 + 4}$

$\frac{25}{40} = \frac{5}{8}$

$\frac{x,0\overline{y} + y,0\overline{x}}{0,0\overline{x} + 0,0\overline{y}} = ?$

A) 89 B) 90 C) 91 D) 99 E) 101

6.

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

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

7.

$$4-\cfrac{4}{4-\cfrac{4}{4-\cfrac{4}{4-\ddots}}}=?$$

Sonsuz kesirinin değeri kaçtır?

What is the value of the continued fraction above?

اوجد ناتج العملية في الاعلى

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

8.

$A \subset B \subset C \subset D$ olmak üzere;
$(D\backslash C)\cup(C\backslash B)\cup(B\backslash A)=?$

If $A \subset B \subset C \subset D$ then which one of the following is equivalent to the set $(D\backslash C)\cup(C\backslash B)\cup(B\backslash A)=?$

ذا كان لدينا $A \subset B \subset C \subset D$ اي من التالي هو الصحيح

$(D\backslash C)\cup(C\backslash B)\cup(B\backslash A)=?$

A) $D\backslash A$ B) $D\backslash B$ C) $D\backslash C$
D) $C\backslash B$ E) $B\backslash A$

9.

$$\frac{a\sqrt{b}+b\sqrt{a}}{\sqrt{a}+\sqrt{b}}=?$$

A) a B) b C) $\sqrt{a}$
D) $\sqrt{b}$ E) $\sqrt{ab}$

10.

$x\,y + \sin y = 0 \Rightarrow \left.\frac{dy}{dx}\right|_{(0,\pi)} = ?$

A) $\frac{1}{\pi}$ B) $\frac{1}{\pi+1}$ C) $\frac{1}{\pi-1}$ D) $-\pi$ E) π

$\frac{1 + \cos y}{y} = \frac{+1}{\pi}$

11.

$f : IR \to IR$,

$$f(x) = \begin{cases} \frac{x+1}{x^2-x-12} & ; x < 2 \\ \sec(\pi x) & ; 2 \le x \le 5 \\ x+2 & ; x > 5 \end{cases}$$

fonksiyonu kaç noktada süreksizdir?

At how many points the function $f : IR \to IR$ is discontinuous?

f(x) اذا كان التابع

في أي من النقاط التالي يكون التابع غير مستمر

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

12.

$$\frac{\sin(71°)\cos(11°) - \sin(11°)\cos(71°)}{\cos(41°)\cos(11°) + \sin(41°)\sin(11°)} = ?$$

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

$\frac{\sin 60}{\cos 30} =$

13.

$z = 3 + 4i \in \mathbb{C}$ ise $\frac{z+|z|}{z-|z|}$ ifadesi aşağıdakilerden hangisine eşittir?

If $z = 3 + 4i \in \mathbb{C}$, then what is the value of $\frac{z+|z|}{z-|z|}$?

$\frac{z+|z|}{z-|z|}$ اذا كان $z = 3 + 4i \in \mathbb{C}$ أي من التالي هو يمثل حل للمعادلة

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

$\frac{3+4i+5}{3+4i-5} = \frac{8+4i}{-2+4i}$

$\frac{4[2+i]}{-2[1-2i]}$

$\frac{-2(2+i)(1+2i)}{5}$

$\frac{-2(2+i+4i-2)}{5}$

$-2i$

14.

Aşağıdakilerden hangisi $|z| = z + \bar{z}$ eşitliğini sağlayan $z = x + iy$ karmaşık sayılarından biri değildir?

Which one of the following is not among the complex numbers $z = x + iy$ satisfying the equality $|z| = z + \bar{z}$

$|z| = z + \bar{z}$ التالية هو ليس حل للمعادلة $z = x + iy$ اي من الخيارات

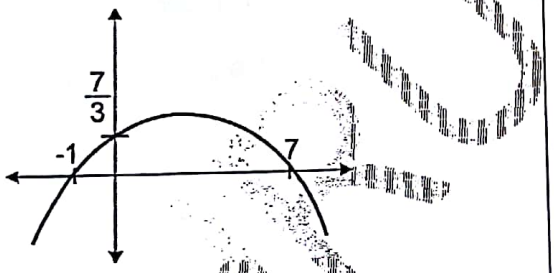
A) $1 + \sqrt{3}i$ B) $1 - \sqrt{3}i$ C) $\sqrt{3} - 3i$

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

$\sqrt{a^2+b^2} = 2a$

$4 = 2$

15.



Grafiği verilen parabolün denklemi aşağıdakilerden hangisidir?

What is the equation of the parabola whose graph is given in the figure?

من الرسم البياني التالي أي هو يمثل معادلة للقطع المكافئ

A) $-\frac{x^2}{3} + 2x + \frac{7}{3}$ B) $-x^2 + 6x + 7$

C) $x^2 - 6x - 7$ D) $x^2 + 6x + 7$

E) $-\frac{x^2}{3} + 3x + \frac{3}{7}$

$P(x) = a(x+1)(x-7)$

$\frac{7}{3} = -7a$

$-\frac{1}{3} = a \quad = -\frac{1}{3}x^2 - 6x - 7$

16.

$\arctan x = \operatorname{arccot} 4x$ ise x 'in alabileceği değerler; aşağıdakilerden hangisinde doğru olarak verilmiştir?

Which one of the following contains the correct values of x, if $\arctan x = \operatorname{arccot} 4x$?

$\arctan x = \operatorname{arccot} 4x$ اذا كان: ماهي القيم التي يمكن ان تاخذها x

A) $\left\{-\frac{1}{2}, \frac{1}{2}\right\}$ B) $\{-1,1\}$ C) $\{0,1\}$

D) $\left\{-\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}\right\}$ E) $\left\{-\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right\}$

17.

$P(x-3) = x^3 - 9x^2 + 27x - 20 \Rightarrow P(\sqrt[3]{2}) = ?$

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

$P(x-3) = (x-3)^3 + 7$

$2 + 7$

18.

$a = \log_2 10$, $b = \log_5 40$ ise a nın b cinsinden ifadesi aşağıdakilerden hangisidir?

What is the value of a in terms of b, if $a = \log_2 10$, $b = \log_5 40$?

اذا كان لدينا اكتب a بدلالة b

A) $\frac{b+3}{2}$ B) $\frac{3}{b-2}$ C) $\frac{b+2}{b-1}$

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

19.

$|a+3|+|b-4|+|ac-21|=0$ olduğuna göre; $a+b+c=?$

if $|a+3|+|b-4|+|ac-21|=0$ then what is the value of $a+b+c=?$

بناء على ذلك $|a+3|+|b-4|+|ac-21|=0$ اذا كان لدينا $a+b+c=?$

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

20.

$$\begin{Bmatrix} f,g:\mathbb{R}\to\mathbb{R} \\ f(x)=3x+4 \\ g(x)=4x-3 \end{Bmatrix} \Rightarrow \left(fog^{-1}\right)(13)=?$$

A) 12 B) 16 C) 18 D) 21 E) 24

21

$$\frac{1{,}3}{0{,}013}-\frac{0{,}196}{0{,}00196}+\frac{0{,}0225}{0{,}000225}=?$$

A) 100 B) 1000 C) -100

D) 1,1265 E) 0,11265

22.

$p>0 \Rightarrow \sum_{k=5}^{16}(2k-1+p)=?$

A) $9(27+2p)$ B) $10(27+2p)$

C) $13(20+p)$ D) $12(20+p)$

E) $11(10+p)$

23.

$$\begin{bmatrix} 2 & 3 & -1 \\ -3 & 1 & 2 \\ 1 & -5 & 3 \end{bmatrix}\begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} -4 \\ 7 \\ 5 \end{bmatrix} \Rightarrow \quad x+y+z=?$$

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

24.

$(423)_5 = (?)_3$

A) $(11012)_3$ B) $(21001)_3$

C) $(10122)_3$ D) $(20011)_3$

E) $(10012)_3$

25.

$A = \begin{bmatrix} 2 & -1 \\ 0 & 3 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 1 \\ -2 & 3 \end{bmatrix}$ ve $C = 2A + 3B$ ise C matrisinin tersi $\left(C^{-1}\right)$ aşağıdakilerden hangisidir?

If $A = \begin{bmatrix} 2 & -1 \\ 0 & 3 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 1 \\ -2 & 3 \end{bmatrix}$ and $C = 2A + 3B$, what is the inverse $\left(C^{-1}\right)$ of the matrix C ?

اذا كان لدينا $A = \begin{bmatrix} 2 & -1 \\ 0 & 3 \end{bmatrix}$ ، $B = \begin{bmatrix} 0 & 1 \\ -2 & 3 \end{bmatrix}$ أي $C = 2A + 3B$ من التالي هو معكوس المصفوفة $\left(C^{-1}\right)$

A) $\frac{1}{6}\begin{bmatrix} 2 & 0 \\ -2 & 6 \end{bmatrix}$ B) $\frac{1}{21}\begin{bmatrix} -5 & 15 \\ -6 & 4 \end{bmatrix}$

C) $\frac{1}{60}\begin{bmatrix} 7 & -2 \\ 0 & 4 \end{bmatrix}$ D) $-\frac{1}{33}\begin{bmatrix} 4 & -9 \\ -6 & 3 \end{bmatrix}$

E) $\frac{1}{66}\begin{bmatrix} 15 & -1 \\ 6 & 4 \end{bmatrix}$

26.

$\int e^x f(x)dx = (\sin x + 2\cos x)e^x + c \Rightarrow f(0) = ?$

A) −1 B) 0 C) 1 D) 2 E) 3

27.

$$\left.\begin{array}{l} 3^a = 64 \\ 4^b = 27 \end{array}\right\} \Rightarrow a.b = ?$$

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

$\frac{9}{3} = \frac{6}{2b}$

28.

$\int_2^3 x^{\frac{1}{\ln x}} dx = ?$

A) 4e B) 3e C) 2e

D) e E) –e

29.

$$\lim_{x \to -1} \frac{1-\cos 2(x+1)}{2(x+1)^2} = ?$$

A) $-\frac{1}{2}$ B) 1 C) –2 D) 2 E) 0

30.

$f(x) = \sin^2 x - e^{2x}$ ise; $\lim_{h \to 0} \frac{f\left(\frac{\pi}{2}+h\right) - f\left(\frac{\pi}{2}\right)}{h}$ limitinin değeri kaçtır?

If $f(x) = \sin^2 x - e^{2x}$, then what is the value of the limit $\lim_{h \to 0} \frac{f\left(\frac{\pi}{2}+h\right) - f\left(\frac{\pi}{2}\right)}{h} = ?$

اذا $f(x) = \sin^2 x - e^{2x}$ كان التابع f(x) ماهي قيمة النهاية

$$\lim_{h \to 0} \frac{f\left(\frac{\pi}{2}+h\right) - f\left(\frac{\pi}{2}\right)}{h} = ?$$

A) $2e^{\pi}$ B) $e^{-\pi}$

C) $e^{-2\pi}$ D) $-2e^{\pi}$ E) e^{π}

31.

$f(x) = \int \frac{dx}{(2x+1)(3x-1)}$, $f(0) = 5$ ise; $f(2) = ?$

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

32.

a, b, c sıfırdan farklı birer rakam ise

$aaa - acb + bbb - bac + ccc - cba$ ifadesinin eşiti aşağıdakilerden hangisidir?

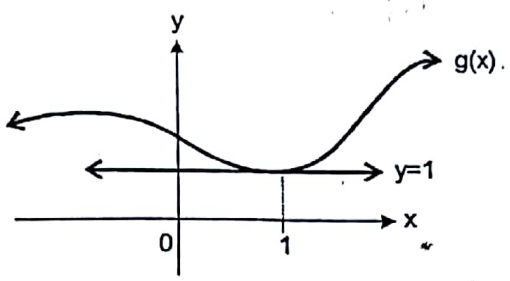
If a, b, c are one digit numbers different then zero, then what is the value of

$aaa - acb + bbb - bac + ccc - cba$?

اذا كانت الاعداد التالي a,b,c تختلف عن الصفر برقم رقم
أي من المعادلات التالية $aaa - acb + bbb - bac + ccc - cba$

A) 111(a + b + c)
B) 110(a + b + c)
C) 11(a + b + c)
D) 0
E) a + b + c

33.

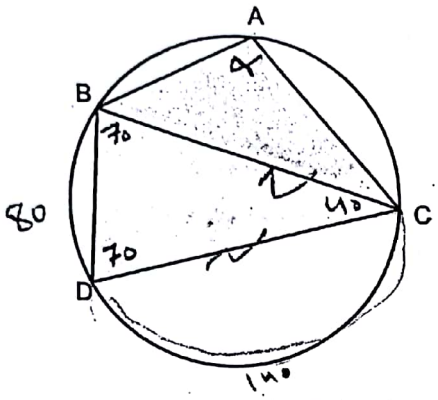


$f(x) = \sin\pi x . g(x)$

$f'(1) = ?$

A) -2π B) $-\pi$ C) 0 D) π E) 2π

34.



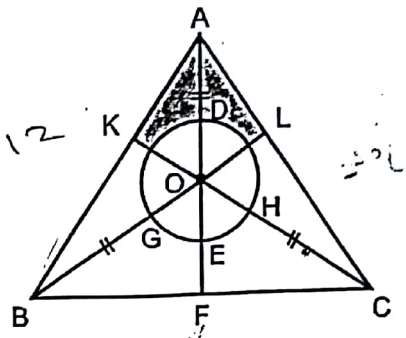
Yukarıdaki şekilde; $|BC| = |CD|$ ve $m(D\hat{B}C) = 70°$ ise $m(B\hat{A}C) = ?$

In the above figure if $|BC| = |CD|$ and $m(D\hat{B}C) = 70°$ then what is $m(B\hat{A}C)$ in degrees?

في الرسم التالي $|BC| = |CD|$ و $m(D\hat{B}C) = 70°$ عندئذ ماهي $m(B\hat{A}C) = ?$

A) 110 B) 105 C) 100 D) 95 E) 90

35.



ABC bir eşkenar üçgen, "O" üçgenin ağırlık merkezi ve çemberin merkezidir.

$|AB| = 12$ cm
$|AD| = |BG| = |CH|$ ise taralı alan kaç cm^2 dir?
$|AD| = 3|EF|$

ABC is an equilateral triangle, $|AB| = 12$ cm, "O" is the centroid of the triangle ABC and the center of the circle at the same time. If $|AD| = |BG| = |CH|$ and $|AD| = 3|EF|$, then what is the shaded area in square centimeters?

اذا كان ABC مثلث متساوي الاضلاع $|AB| = 12$ cm , مركز "O"
$|AD| = |BG| = |CH|$
$|AD| = 3|EF|$
ثقل المثلث وهي مركز الدائرة التي تحقق

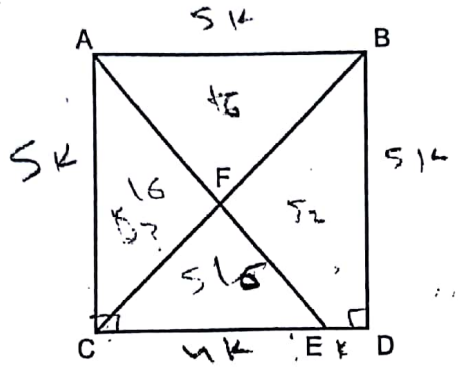
احسب مساحة المنطقة المظللة

A) $\frac{\sqrt{3}}{2}(12+\pi)$ B) $\frac{3(12+\sqrt{3}\pi)}{4}$

C) $36+\sqrt{3}\pi$ D) $\frac{(36+\pi)\sqrt{3}}{3}$

E) $12\sqrt{3}-\pi$

36.



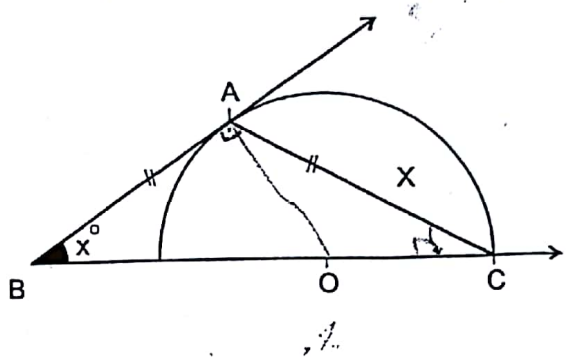
ABCD bir kare, $|CE| = 4|ED|$ ve $A(CEF) = 16\ cm^2$ ise, A(ABCD) = ?

ABCD is a.square, if $|CE| = 4|ED|$ and $A(CEF) = 16\ cm^2$ then what is A(ABCD) in square centimeters ?

$A(CEF) = 16\ cm^2$ ماهو مساحة
إذا كان ABCD مربع
$A(ABCD) = ?$

A) 100 B) 90 C) 81 D) 72 E) 64

37.



[BA , O merkezli çembere A noktasında teğettir.

$|AB| = |AC|$, $m(\hat{B}) = x^\circ = ?$

[BA is tangent to the circle with center O at the point A. If $|AB| = |AC|$, then what is the measure $m(\hat{B}) = x^\circ$ of the angle B in degrees?

[BA اذا كان مماس للدائرة التي مركزها O في النقطة A ماهو قياس الزاوية B $|AB| = |AC|$, $m(\hat{B}) = x^\circ = ?$

A) 45° B) 40° C) 35° D) 30° E) 25°

38.

$f(x+1) = 2f(x-1)$

$f(3) = 2 \Rightarrow f(15) = ?$

A) 2^7 B) 2^9 C) 2^{11} D) 2^{13} E) 2^{15}

15 $f(15) = 2f(13)$

13 $f(13) = 2f(11)$

11 $f(11) = 2f(9)$

$f(5) = 2f(3)$

$f(15) = 2^{7}$

39.

$a + \frac{1}{2a} = \sqrt{10} \Rightarrow \sqrt{a^2 + \frac{1}{4a^2}} = ?$

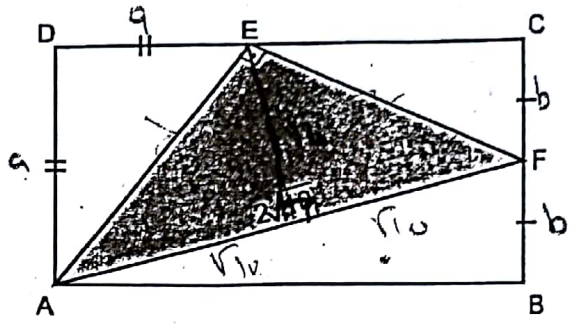
A) $5\sqrt{3}$ B) 3 C) $4\sqrt{3}$ D) 4 E) $3\sqrt{5}$

$10 - \frac{1}{2} = \frac{19}{2}$

$a^2 + \frac{1}{4a^2} + \frac{1}{2} = 10$

$\sqrt{\frac{19}{2}}$

40.



ABCD bir dikdörtgen ve

$|AD| = |DE|, \ |CF| = |BF|, \ |AF| = 2\sqrt{10}$

A (AEF) = ?

In the figure ABCD is a rectangle.

If $|AD| = |DE|, \ |CF| = |BF|, \ |AF| = 2\sqrt{10}$ units, then what is the area A(AEF) of the triangle AEF in square units?

اذا كان ABCD مستطيل

$|AD| = |DE|, \ |CF| = |BF|, \ |AF| = 2\sqrt{10}$

A (AEF) = ? ماهي مساحة المثلث

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

$a = 2b$