1. ve 2. sorularda, I. gruptaki sözcüklerin harfleri birer rakamla gösterilerek II. gruptaki sayılar elde edilmiştir. Soru işaretiyle belirtilen sözcüğün hangi sayıyı gösterdiğini bulunuz.
In questions 1 and 2, the numbers in group II stand for the words in group I, when each letter has been coded with a specitic numeral. Find the number which corresponds to the word indicated by the question mark.

1.

I.	II.
MAYA	6121 2456 2131
YAME	5461 3124
KAMA	
SEKA	
MESK	

SEKA = ?

A) 6121 B) 2456 C) 2131 D) 5461 E) 3124

2.

I.	II.
ASKI	3421 5421 3451
ASIK	1243 1234
KISA	
KINA	
NISA	

KISA = ?

A) 1234 B) 1243 C) 3421 D) 3451 E) 5421

3. ve 4. soruları aşağıdaki tabloya göre cevaplayınız.
Answer questions 3 and 4 in accordance with the table given below.

Δ	A	H	M	E	T
A	H	M	E	T	A
H	M	E	T	A	H
M	E	T	A	H	M
E	T	A	H	M	E
T	A	H	M	E	T

Tabloda Δ işleminin görevi belirlenmiştir.
The operation of Δ is established in the table.

Örnekler (Examples)

H Δ M = T

A Δ T = A

3. (H Δ T) Δ (A Δ E) = ?

A) A B) H C) M D) E E) T

4. (M Δ M) Δ (A Δ X) = T

X = ?

A) A B) H C) M D) E E) T

Diğer sayfaya geçiniz.

5. I. $a \boxtimes b = \begin{cases} 2a + b, & a \le b \\ a^2 - b^2, & a > b \end{cases}$

II. $(-2) \boxtimes (4 \boxtimes 3) = ?$

I. eşitlikte ⊠ işleminin görevi belirlenmiştir.

Buna göre, II. eşitlikte soru işaretinin yerine aşağıdakilerden hangisi gelmelidir?

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

A) 3 B) 7 C) 9 D) 11 E) 17

6. I. $a \bigtriangledown b = \dfrac{a+b}{a \cdot b}$

II. $a \square b = a^3 - b^3$

III. $\left(\dfrac{1}{2} \bigtriangledown \dfrac{1}{3}\right) \square 4 = ?$

I. ve II. eşitliklerde Δ ve □ işlemlerinin görevleri belirlenmiştir. Buna göre III. eşitlikte soru işaretinin yerine aşağıdakilerden hangisi gelmelidir?

In eguations I and II, the operations Δ and □ are established. According to these operations, which of the following does the question mank stand for in equation III.)

A) 15 B) 27 C) 31 D) 43 E) 61

7.

x	a	b
a	a+12	
b		12a+1

b = ?

Yukarıdaki çarpma tablosunda a ve b harfleri pozitif birer sayının yerine kullanılmıştır.

Buna göre, b kaçtır?

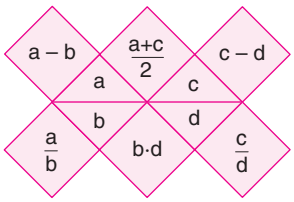
In the multiplication table above, the letters a and b each stand for a positive number.

Accordingly, what is the valve of b?

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

Diğer sayfaya geçiniz.

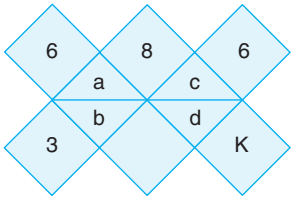
8 – 10. soruları aşağıdaki şekile göre cevaplayınız.
Answer questions 8 – 10 in accordance with the figure given below.



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

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

8.



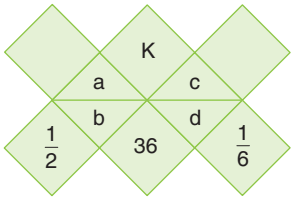
K = ?

Yukarıda verilen şekle göre, K kaçtır?

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

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

9.



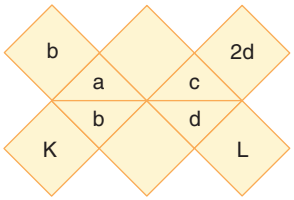
K = ?

Yukarıda verilen şekle göre, K kaçtır?

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

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

10.



K + L = ?

Yukarıda verilen şekle göre, K + L kaçtır?

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

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

11. $\frac{1}{2\cdot3}+\frac{1}{3\cdot4}+\frac{1}{4\cdot5}+\ldots+\frac{1}{19\cdot20}=?$

A) $\frac{9}{10}$ B) $\frac{19}{20}$ C) $\frac{9}{20}$ D) $\frac{19}{10}$ E) $\frac{1}{19}$

Diğer sayfaya geçiniz.

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

$3x + 2y - 5z = -32$

y = ?

A) 6 B) 9 C) 12 D) 15 E) 18

13. $|3x - 6| + |8 - 4x| = 35$

x = ?

A) {–2, 7} B) {–3, 2} C) {–7. 3}
D) {–3, 3} E) {–3, 7}

14. $3^{x+1} \cdot 9^{x-2} = 27^{2x-1}$

x = ?

A) 0 B) 1 C) $\frac{3}{2}$ D) 2 E) $\frac{3}{2}$

15. $a = \sqrt{5} + \sqrt{3}$

$b = \sqrt{5} - \sqrt{3}$

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

A) 2 B) $2\sqrt{15}$ C) $8 + 2\sqrt{15}$
D) 8 E) $\sqrt{15}$

Diğer sayfaya geçiniz.

16. $\sum_{k=1}^{21} (-1)^k \cdot (2k-1) = ?$

A) –27 B) –21 C) –19 D) –17 E) 20

17. $i^2 = -1$

$Z_1 = 6(\cos 65° + i \sin 65°)$

$Z_2 = 4(\cos 40° + i \sin 40°)$

$\frac{Z_1^2}{Z_2} = ?$

A) 3i B) 3 C) 9i D) 9 E) 12i

18. $\log_8 x + \log_4 x + \log_2 x = \frac{22}{3}$

x = ?

A) 2 B) 4 C) 8 D) 16 E) 32

19. $A = \begin{bmatrix} 2 & 0 & 0 \\ 1 & 3 & 5 \\ 2 & 4 & 3 \end{bmatrix}$

det(A) = |A| = ?

A) –24 B) –22 C) –20 D) –18 E) –14

Diğer sayfaya geçiniz.

20. $f(x)=\dfrac{x^2-1}{x-1}+\dfrac{x^2-4x+4}{x-2}$

$\lim\limits_{x\to 1} f(x)+\lim\limits_{x\to 2} f(x)=?$

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

21. $a\in R,\ b\in R$

$\lim\limits_{x\to 1}\dfrac{x^2-3x+a}{x^2-1}=b$

a + b = ?

A) 2 B) $\frac{3}{2}$ C) 1 D) $\frac{1}{2}$ E) 0

22. $f(x)=2\sqrt{x}+x^2-3$

$\lim\limits_{h\to 0}\dfrac{f(1+h)-f(1)}{h}=$ **?**

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

23. $f(x)=g(x^2)+kx^3$

$f'(-1)=g'(1)=2$

k = ?

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

Diğer sayfaya geçiniz.

24. $x^3 + xy^2 + y - 2 = 0$

$$\left.\frac{dy}{dx}\right|_{\substack{x=0\\y=2}} = ?$$

A) –5 B) –4 C) –3 D) –2 E) –1

25. $\int \frac{3x+4}{x-2} dx = ?$

A) $3\ln|x-2| + c$ B) $3x - 4\ln|x-2| + c$

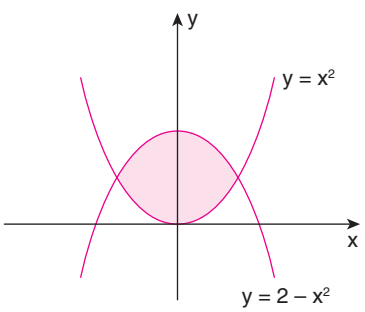
C) $3x + 10\ln|x-2| + c$ D) $10x + 3\ln|x-2| + c$

E) $3x^2 + 10\ln|x-2| + c$

26. $\int_0^{\frac{\pi}{2}} e^{\sin x} \cdot \cos x dx = ?$

A) 1 B) e C) e + 1 D) e – 1 E) e – π

27.

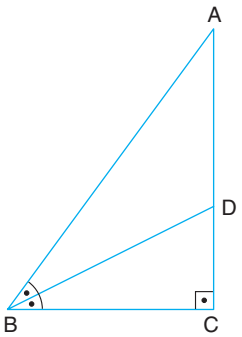


Taralı bölgenin alanı aşağıdakilerden hangisidir?

Which of the following is the area of the shaded region?

A) $\frac{16}{3}$ B) $\frac{14}{3}$ C) 4 D) $\frac{8}{3}$ E) $\frac{4}{3}$

28.



$AC \perp BC$

$|BC| = 12$ cm

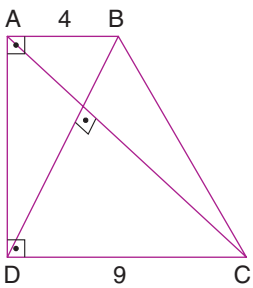
$|AB| = 20$ cm

$m(\widehat{ABD}) = m(\widehat{DBC})$

$A(\widehat{ABD}) = ?$ cm^2

A) 60 B) 54 C) 48 D) 45 E) 42

29.



$AB \perp AD$

$AD \perp DC$

$AC \perp BD$

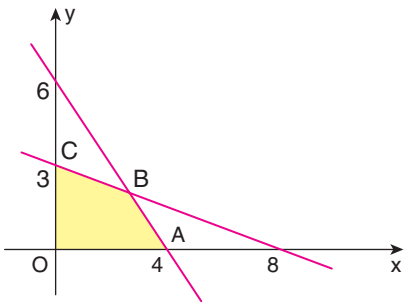
$|AB| = 4$ cm

$|DC| = 9$ cm

$A(ABCD) = ?$ cm^2

A) 13 B) $\frac{39}{2}$ C) 26 D) 39 E) 52

30.



$A(OABC) = ?$

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

Diğer sayfaya geçiniz.