

1.

$$-4 - \frac{5 - \frac{4 - \frac{3 - \frac{1}{x}}{2}}{2}}{2} = -5 \Rightarrow x = ?$$

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

2. $n \in \mathbb{N}, A \in \mathbb{N}$

$$100! - 60! = A10^n \Rightarrow \max(n) = ?$$

- A) 12
B) 14
C) 20
D) 24
E) 38

3. $x = 10^{15} + 1$

x^2 sayısının rakamlarının sayısal değerleri toplamı kaçtır?

جمع ارقام عدد x^2 چقدر است؟

- A) 2
B) 312
C) 4
D) 50
E) 106

4. 720 sayısının pozitif bölenlerinden kaç tanesi 6'nın katıdır?

How many of the positive divisors of 720 are multiples of 6?

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

5.

$$3x - y = 7$$

$$9x^2 - y^2 + 3x + y + 24 = 0$$

$$\Rightarrow y = ?$$

- A) $-\frac{10}{3}$
B) -5
C) $\frac{5}{3}$
D) 5
E) $\frac{10}{3}$

6.

$$(5^2 + 1) \cdot (5^4 + 1) \cdot (5^8 + 1) = \frac{25^x - 1}{24}$$

$$\Rightarrow x = ?$$

- A) 6
B) 8
C) 10
D) 12
E) 16

7. $x=256$ olmak üzere

$\sqrt[3]{x^5 \sqrt{x^2} \sqrt{x^4} \cdot \sqrt{x^3}}$ ifadesinin değeri kaçtır?

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

8.

$$\frac{\sqrt{11 + \sqrt{22 + \sqrt{5 + \sqrt{13 + \sqrt{9}}}}}}{\sqrt{12 \cdot \sqrt{12} \cdot \sqrt{12} \cdot \sqrt{12} \dots}} = ?$$

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

9.

$$x^2 - x = -1$$

$$x^{2015} + x^{982} + x^{600} + 2 = ?$$

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

10. $m \in \mathbb{R}^+$

$$m + \sqrt{2} = x, m - \sqrt{2} = \frac{1}{x} \Rightarrow x = ?$$

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

11.

$$|a| > a, a \cdot c < 0, a \cdot b < a \cdot c$$

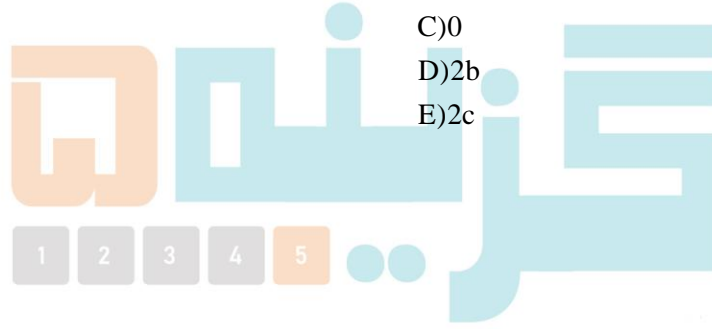
$$|a - b| - |b - c| - |c - a| = ?$$

- A)2a
- B)a - c
- C)0
- D)2b
- E)2c

12.

$$\left. \begin{array}{l} a + 2b - c = 24 \\ 2a - b + 4c = 12 \\ a - b + c = 6 \end{array} \right\} \Rightarrow a + b + c = ?$$

- A)11
- B)15
- C)18
- D)20
- E)22



13. $x^6 - 7x^3 - 8$ ifadesinin çarpanlarından biri aşağıdakilerden hangisi değildir?
Which of the following is not the factor of the expression $x^6 - 7x^3 - 8$?

- A) $x^2 + 2x + 4$
B) $x + 1$
C) $x - 2$
D) $x^2 + x + 1$
E) $x^2 - x + 1$

14. $a \in \mathbb{Z}$
 $3^{20} < a^5 < 5^{15}$ olduğuna göre kaç farklı a tamsayısı vardır?
Since $3^{20} < a^5 < 5^{15}$ how many different integers a are there?

- A) 40
B) 41
C) 42
D) 43
E) 44

15.
 $x \equiv 2 \pmod{5}$
 $x \equiv 2 \pmod{8}$
 $220 < x < 250 \Rightarrow x = ?$
A) 238
B) 240
C) 242
D) 244
E) 248

16.

$$f(x) = \begin{cases} 3x - 1 & x \equiv 0 \pmod{2} \\ 2x + 1 & x \equiv 1 \pmod{2} \end{cases}$$

$$g(x) = \begin{cases} x^2 + 1 & x \equiv 0 \pmod{3} \\ 2x - 4 & x \equiv 1 \pmod{3} \\ 3x - 1 & x \equiv 2 \pmod{3} \end{cases}$$

$$\Rightarrow (f \circ g)(5) = ?$$

- A) 17
B) 21
C) 29
D) 31
E) 41

17.

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

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

$A \cup B$ kümesinin alt kümelerinin kaç tanesi

$A \cap B$ kümesinin alt kümeleri değildir?

چند زیر مجموعه ی $A \cup B$ زیر مجموعه ی $A \cap B$ نیست؟

- A) 16
B) 32
C) 48
D) 56
E) 60

18.

$$a < b < 0 < c < d$$

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

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

19. $A = \{a, b, c, d, e, f, g\}$ kümesinin en az 2 elemanlı kaç tane alt kümesi vardır?

How many subsets of $A = \{a, b, c, d, e, f, g\}$ have at least 2 elements?

- A)128
- B)120
- C)90
- D)60
- E)30

20.

$$A \in Z = \{x = 3k, 0 < k \leq 40\}$$

$$B \in Z = \{x = 4m, 0 < m \leq 30\}$$

$$n(A - B) = ?$$

- A)10
- B)20
- C)30
- D)40
- E)50

21.

$$\sqrt{\frac{xyz, xyz}{x, yzxyz}} + \sqrt{\frac{1111}{11}} + 43 = ?$$

- A)21
- B)22
- C)23
- D)24
- E)25

22. $10^{2022} - 2021$

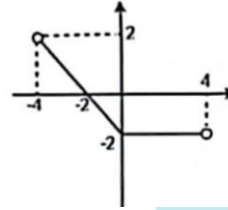
ifadesinin sonucunda kaç tane 9 rakamı vardır?

How many digits of the number above is 9 ?

- A)2019
- B)2020
- C)2021
- D)2022
- E)2023

23.

Aşağıdaki $f(x)$ fonksiyonunun grafiği gösterilmiştir.



Bu fonksiyonun tanım kümesi A, görüntü kümesi B olduğuna göre $A \cap B$ kümesinin kaç farklı tamsayı elemanı vardır?

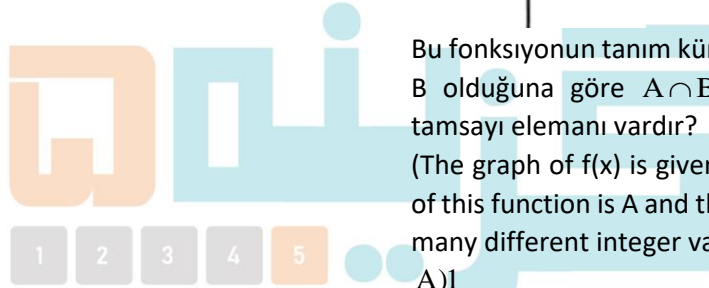
(The graph of $f(x)$ is given above. If the domain of this function is A and the image is B, then how many different integer values have the $A \cap B$?)

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

24. $(x+1)f(x) = x^2 + 2x - 5 + 3f(x+1)$ olduğuna göre $f(1)$ kaçtır?

(If $(x+1)f(x) = x^2 + 2x - 5 + 3f(x+1)$ then what is the value of $f(1)$?)

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



25. Aşağıdaki ifadelerden kaç tanesi polinom belirtir?

(How many of the following statements are polynomial?)

I. $\sqrt{2}x^2 + x - 2$

II. $4x^2 - \frac{1}{x}$

III. 8

IV. $\sqrt{x} + 4$

V. $\frac{\pi x^x}{3} + ex + \sqrt{3}$

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

26.

$\frac{\sqrt{80} \cdot \sqrt{72}}{\sqrt{40} + \sqrt{2} \cdot \sqrt{5}}$ işleminin sonucu kaçtır?

(what is the answer of $\frac{\sqrt{80} \cdot \sqrt{72}}{\sqrt{40} + \sqrt{2} \cdot \sqrt{5}}$?) 4 5

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

27. $x = \sqrt{5}, y = \sqrt[3]{7}, z = \sqrt[3]{3}$

sayıların doğru sıralaması aşağıdakilerden hangisidir?

(Which of the following does the correct order of x, y, z ?)

- A) $x < y < z$
B) $z < y < x$
C) $z < x < y$
D) $z = y < x$
E) $y < x < z$

28.

$\left. \begin{matrix} 2^a = 81 \\ 3^b = 32 \end{matrix} \right\} a \cdot b = ?$

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

29.

$2, a + 2, bb + 2, ccc + 2, dddd + 2, eeeee = 12, 09606$

$a + \frac{d+b}{c+e} = ?$

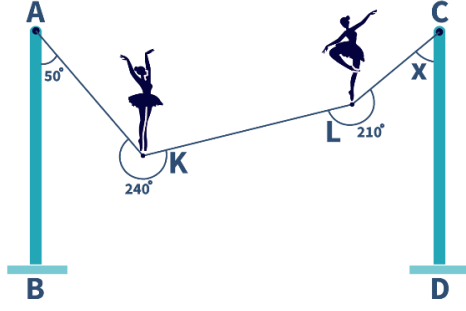
- A) $\frac{29}{11}$
B) $\frac{31}{11}$
C) $\frac{29}{10}$
D) $\frac{31}{10}$
E) $\frac{18}{11}$

30. $11^{2001} \equiv x \pmod{22}$

olduğuna göre, x in değeri kaçtır?

- A)1
B)10
C)11
D)19
E)21

31.



$AB \parallel CD$

$m(\text{BAK}) = 50^\circ$, $m(\text{AKL}) = 240^\circ$, $m(\text{KLC}) = 210^\circ$ ve $m(\text{LCD}) = x$

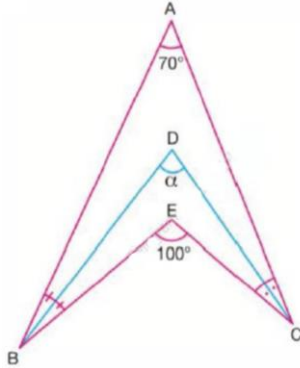
değerleri şekildedeki gibidir.

Buna göre x kaç derecedir?

According to above, how many degrees is x ?

- A)20
- B)30
- C)35
- D)40
- E)60

32.



$m(\text{ABD}) = m(\text{DBE})$

$m(\text{ACD}) = m(\text{DCE})$

$m(\text{BAC}) = 70^\circ$

$m(\text{BEC}) = 100^\circ$

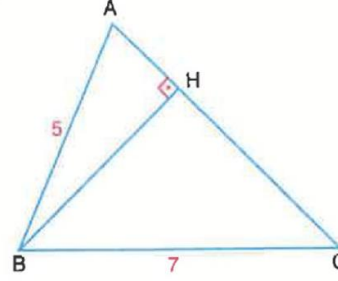
$m(\text{BDC}) = \alpha$

Yukarıdaki verilere göre, α kaç derecedir?

According to above, how many degrees is α ?

- A)75
- B)80
- C)85
- D)90
- E)95

33.



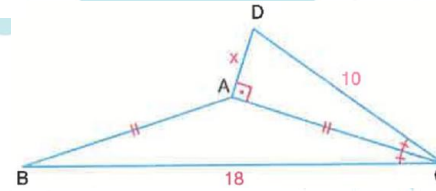
$[BH] \perp [AC]$, $|AB| = 5\text{cm}$, $|BC| = 7\text{cm}$, $|AC| = 8\text{cm}$

Yukarıdaki verilere göre, $|AH|$ kaç cm dir?

According to above, how many cm is $|AH|$?

- A)2
- B) $\frac{9}{4}$
- C) $\frac{5}{2}$
- D)3
- E) $\frac{7}{2}$

34.



$[DA] \perp [AC]$, $[CA]$ açıortay $|AB| = |AC|$

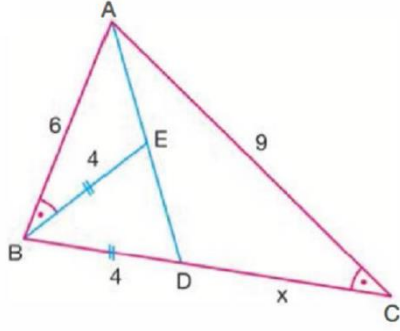
$|DC| = 10\text{cm}$, $|BC| = 18\text{cm}$

Yukarıdaki verilere göre, $|DA| = x$ kaç cm dir?

According to above, how many cm is $|DA| = x$?

- A) $\sqrt{10}$
- B) $2\sqrt{3}$
- C) $\sqrt{15}$
- D) $2\sqrt{5}$
- E)6

35.



ABC üçgen / ABC is a triangle

$$m(\angle ABE) = m(\angle ACB)$$

$$|BE| = |BD| = 4 \text{ cm}$$

$$|AB| = 6 \text{ cm}$$

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

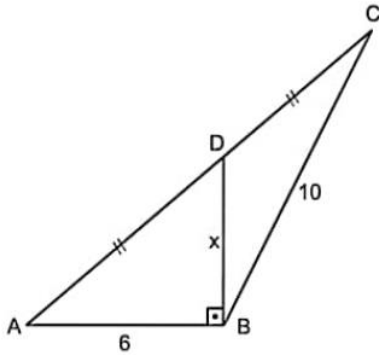
Yukarıdaki verilere göre, $|DC| = x$ kaç cm dir?

According to above, how many cm is $|DC| = x$?

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



36.



ABC üçgeninde

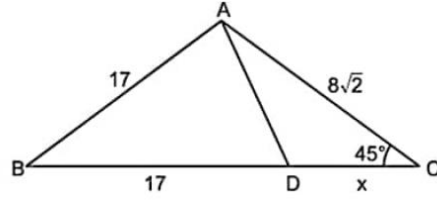
$$BD \perp AB, |AD| = |CD|$$

$$|BC| = 10 \text{ cm}, |AB| = 6 \text{ cm}$$

Yukarıdaki verilere göre, $|BD| = x$ kaç cm dir?

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

37.



ABC üçgeninde

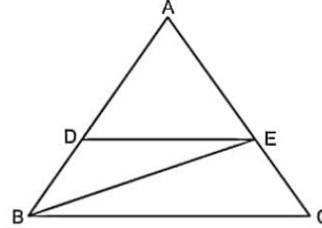
$$|AB| = |BD| = 17 \text{ cm}, |AC| = 8\sqrt{2} \text{ cm}$$

$m(\angle ACB) = 45^\circ$ olduğuna göre, $|CD| = x$ kaç cm

dir?

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

38.



ABC üçgeninde

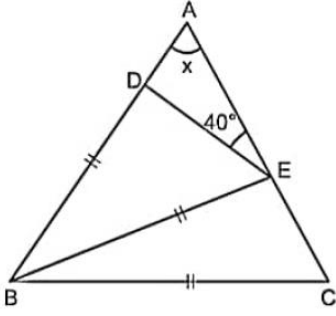
$$DE \parallel BC$$

$$\frac{A(BDE)}{A(BEC)} = \frac{3}{5}$$

Yukarıdaki verilere göre, $\frac{A(ADE)}{A(BEC)}$ oranı kaçtır?

- A) $\frac{1}{8}$
- B) $\frac{3}{11}$
- C) $\frac{5}{16}$
- D) $\frac{11}{25}$
- E) $\frac{9}{10}$

39.



ABC üçgeninde

$$|AB| = |AC|$$

$$|BC| = |BE| = |BD|$$

$$m(\angle AED) = 40^\circ$$

olduğuna göre, $m(\angle BAC) = x$ kaç derecedir?

A)20

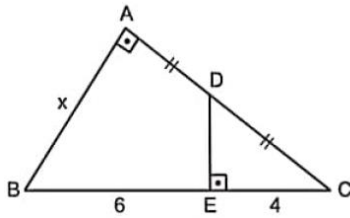
B)30

C)40

D)50

E)60

40.



ABC dik üçgen

$$DE \perp BC, |AD| = |CD|$$

$$|BE| = 6\text{cm}, |EC| = 4\text{cm}$$

Yukarıdaki verilere göre, $|AB| = x$ kaç cm dir?

A) $2\sqrt{3}$

B) $\sqrt{15}$

C) $2\sqrt{5}$

D)5

E) $4\sqrt{2}$

41.

I. Aadi = 10111000

II. zadma = 01110011

III. die = 00011100

\Rightarrow Azadi = ?

A)11100111

B)11110001

C)11111000

D)00011111

E)11100110

42.

Ahmet = 8

Ali = 2

Amir = 4

Mohsen = ?

A)6

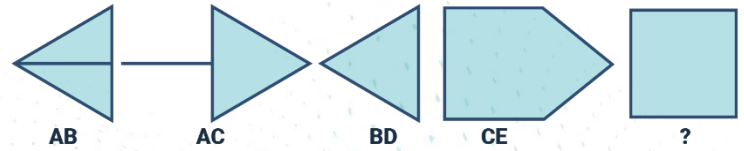
B)8

C)9

D)12

E)16

43.



A)AD

B)BC

C)CD

D)DE

E)AE

44. $36 - 37 - 39 - 45 - 69 - ?$

- A)99
- B)129
- C)117
- D)189
- E)216

45. $72 - 53 - 34 - 25 - 29 - ?$

- A)85
- B)91
- C)72
- D)53
- E)34

46.

A	B	C
3	16	23
5	26	39
6	31	47
⋮		
14	x	y

$2x + y = ?$

- A)155
- B)310
- C)437
- D)389
- E)253

47.

$$\frac{a_1}{6}, \frac{a_2}{7}, \frac{a_3}{10}, \frac{a_4}{15}, \frac{a_5}{22}, \dots, \frac{a_{13}}{x}$$

$x = ?$

- A)127
- B)140
- C)150
- D)175
- E)215

48. $7 - 13 - 38 - 102 - 183 - ?$

- A)210
- B)215
- C)232
- D)256
- E)343

49.

Which of the following sequences are incorrect?

Aşağıdaki dizilerden hangileri hatalıdır?

- A)169,121,49,25,9
- B)47,43,41,37,31
- C)8,10,18,28,40
- D)4,6,10,14,22
- E)13,17,19,23,29

50.

$$a \bullet b = \frac{ab}{a+b} + 19$$

$$a \square b = \frac{1}{a} + \frac{1}{b}$$

$$\Rightarrow (14 \square 19) \cdot (14 \bullet 19) = ?$$

A) $\frac{19}{2}$

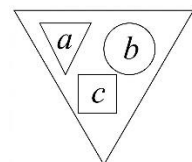
B) $\frac{14}{19}$

C) $\frac{47}{14}$

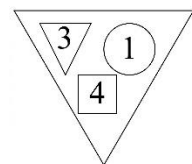
D) $\frac{17}{14}$

E) $\frac{19}{6}$

51.



$$= \left(\frac{a^2 + 3b}{c} \right)^2$$



$$= ?$$

- A)36
B)25
C)16
D)9
E)4

52.

34	71	42	25
↓	↓	↓	↓
17	6	0	?

- A)7
B)11
C)17
D)21
E)27

53.

$$62 \star 50 = 41$$

$$71 \star 41 = 45$$

$$32 \star 85 = 10$$

$$86 \star 40 = ?$$

- A)45
B)40
C)35
D)30
E)20

54.

$$5 \star 7 = 1$$

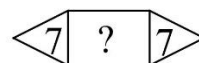
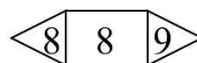
$$9 \star 9 = 9$$

$$17 \star 20 = 11$$

$$24 \star 30 = ?$$

- A)6
B)8
C)10
D)12
E)14

55.



- A)9
B)7
C)5
D)4
E)3

56.

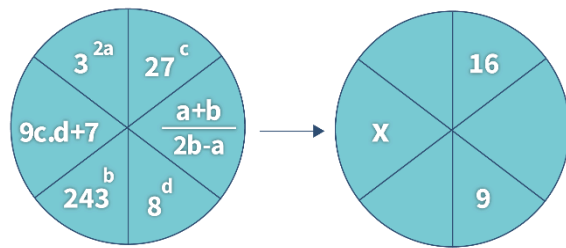
+	a	b
a		33
b		
c		

x	a	b
a		
b		
c	63	36

$a+2b=?$

- A)18
- B)27
- C)30
- D)45
- E)47

59.



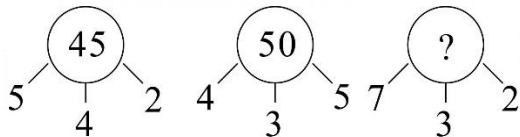
$x=?$

- A)11
- B)13
- C)15
- D)16
- E)20

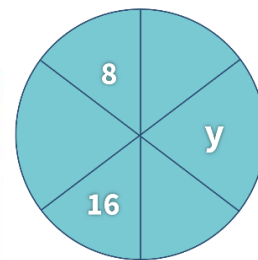
60.

با توجه به سوال قبل y را بیابید.

57.

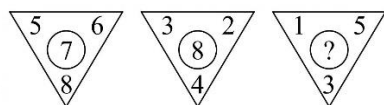


- A)55
- B)60
- C)62
- D)70
- E)85



- A)3
- B)6
- C)9
- D)16
- E)23

58.



- A)5
- B)6
- C)7
- D)8
- E)11

61.

17 33 64 124 240 x

$x=?$

- A)646
- B)442
- C)398
- D)468
- E)480

62.

{	abcde	{	47256
	cedab		25764
	ecabd		62547
	dabec		74625

$(a \times b) - c = ?$

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

63.

$\star 403 = 11$

$\star 723 = 19$

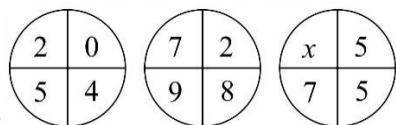
$\star 531 = 14$

$\star 238 = 15$

$\star 347 = ?$

- A) 14
- B) 17
- C) 19
- D) 21
- E) 24

64.



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

65.

$7 \star 2 = 23$

$5 \star 4 = 19$

$6 \star 8 = 26$

$5 \star 1 = ?$

- A) 9
- B) 12
- C) 14
- D) 16
- E) 17

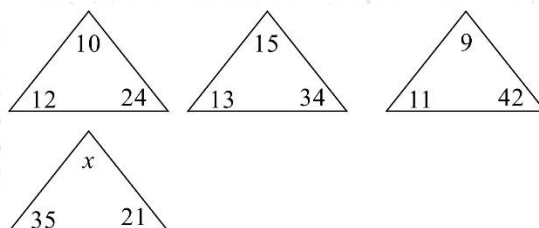
66.

3	2	1	2
1	4	7	8
10	5	4	8
1	9	5	x

→ result

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

67.



- A) 7
- B) 11
- C) 13
- D) 15
- E) 17

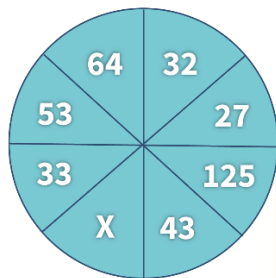
68.

1	2	3	4	5	...	9	...	y
4	8	14	22	32	...	x		212

$x+y=?$

- A)96
- B)104
- C)106
- D)109
- E)112

69.



$x=?$

- A)21
- B)22
- C)23
- D)24
- E)25

70.

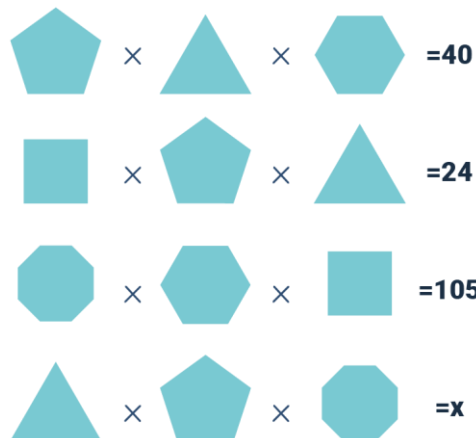
+	a	b	c
a			b+1

×	a	b	c
b	48		24

$a=?$

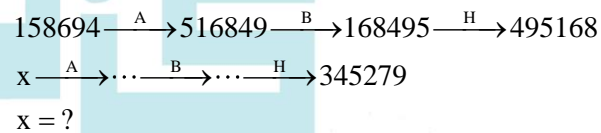
- A)6
- B)5
- C)4
- D)3
- E)2

71.



- A)49
- B)52
- C)56
- D)63
- E)68

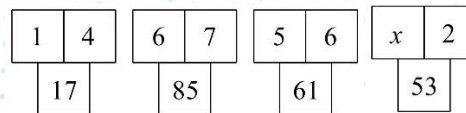
72.



$x=?$

- A)257943
- B)259734
- C)259743
- D)527934
- E)527943

73.



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

74.

4	6	8	10
30	56	90	x
5	7	9	11

A)121 B)132 C)144 D)156 E)196

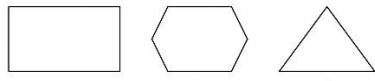
75.

A	9	25	B	121	C
D	E	F	7	G	13
H	J	30	56	132	L

H=?

- A)2
B)3
C)4
D)6
E)7

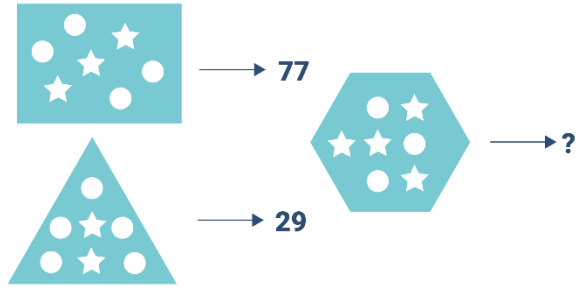
76.



$5x - 7 = 13$ $7x - 9 = 33$?

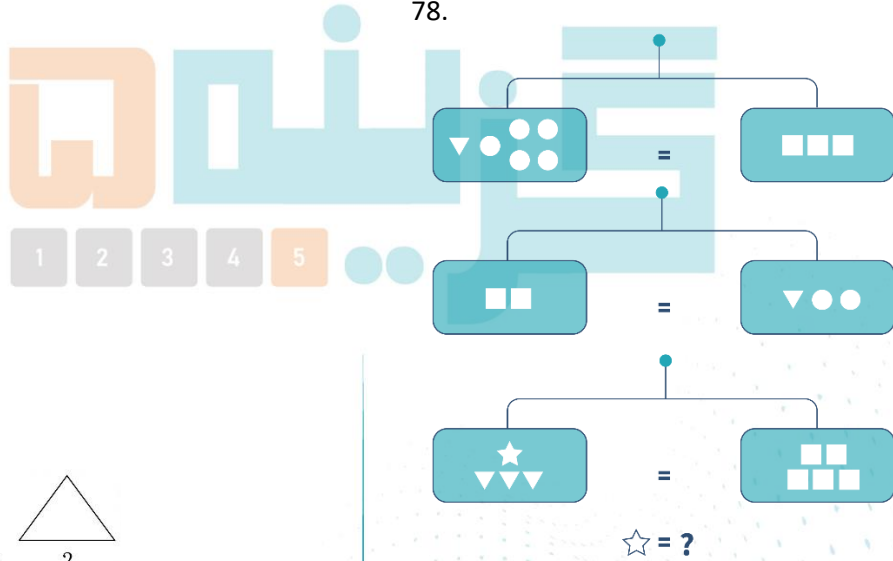
- A) $4x + 6 = 6$
B) $4x - 6 = 6$
C) $4x - 6 = 12$
D) $4x - 6 = 4$
E) $4x + 6 = 12$

77.



- A)21
B)36
C)51
D)58
E)124

78.



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

79.

$$a \square b = a^2 + 2b$$

$$a \star b = \frac{a}{2} + \frac{b}{3}$$

$$(16 \star 9) \square 7 = ?$$

A)135

B)125

C)102

D)94

E)84

80.

$$28 \rightarrow 5,3$$

$$19 \rightarrow 5,4$$

$$44 \rightarrow 4,0$$

$$46 \rightarrow ?,?$$

A)4.1

B)5.1

C)4.2

D)5.2

E)3.1

