

$$1. \left(\frac{3}{2} - \frac{5}{4}\right) - \left[\left(2 \cdot \frac{1}{4}\right) \frac{1}{4} - 1\right] = ?$$

- A) $-\frac{4}{5}$ B) $-\frac{3}{4}$ C) $-\frac{1}{4}$ D) $\frac{1}{4}$ E) $\frac{3}{4}$

$$2. \frac{\sqrt[3]{(-3)^3} - \sqrt{(-3)^2}}{\sqrt[3]{(-3)^2} \sqrt{(-3)^2}} = ?$$

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

$$3. \frac{\sqrt{4,4} + \sqrt{1,1} + \sqrt{9,9}}{\sqrt{1,1}} = ?$$

- A) 14 B) 13 C) 9 D) 8 E) 6

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

- A) $\frac{3}{34}$ B) $\frac{2}{17}$ C) $\frac{3}{17}$ D) $\frac{17}{3}$ E) $\frac{34}{3}$

$$5. \frac{0,1\bar{6}}{0,3\bar{3}} = ?$$

- A) $\frac{3}{2}$ B) 1 C) $\frac{2}{3}$ D) $\frac{1}{2}$ E) $\frac{16}{33}$

$$6. (301)_4 = (122)_4 + (1ab)_4 \Rightarrow a + b = ?$$

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

$$7. \frac{4}{1 + \frac{3}{1 + \frac{2}{x-2}}} = 2 \Rightarrow x = ?$$

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

$$8. \frac{a}{b} = -2 \Rightarrow \frac{2b}{a} - \frac{3a}{b} = ?$$

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

$$9. \left. \begin{array}{l} 3^{x+y} = 80! \\ 3^{2x+y} = 81! \end{array} \right\} \Rightarrow x = ?$$

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

$$10. \sqrt{a - \sqrt{a - \sqrt{a - \dots}}} = \sqrt[3]{9 \sqrt[3]{9 \sqrt[3]{9 \dots}}}$$

$$\Rightarrow a = ?$$

- A) 6 B) 12 C) 16 D) 27 E) 36

$$11. \frac{(n+1)!}{(n-1)!} = 420 \Rightarrow n = ?$$

- A) 16 B) 20 C) 24 D) 28 E) 32

12. وفقا لما يلي، أي من التالي هو الصحيح؟

$$\left. \begin{array}{l} 2a = 3b \\ 4b = 5c \end{array} \right\}$$

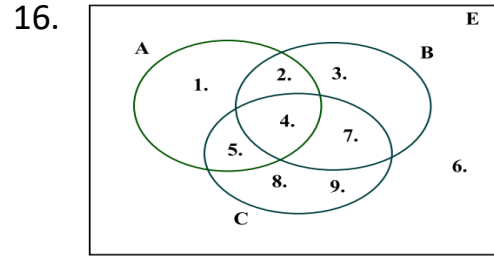
- A) $a < b < c$ B) $a < c < b$
 C) $c < a < b$ D) $b < c < a$
 E) $c < b < a$

13. $3 < x < 5 \Rightarrow \frac{|(x-2)(x-5)| + x - 5}{x^2 - 4x + 3} = ?$

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

14. $f(x, y) = x^y - y^x \Rightarrow f(f(3, 1), 2) = ?$
 A) 0 B) 1 C) 2 D) 3 E) 4

15. يعمل 3 عمال 8 ساعات يوميا و ينهون 200 قطعة من العمل في 5 أيام، كم ساعة في اليوم يجب أن يعمل 4 عمال لإنهاء 300 وحدة في 5 أيام؟
 A) 9 B) 8 C) 7 D) 6 E) 5



$A \setminus (B \cap C) = ?$

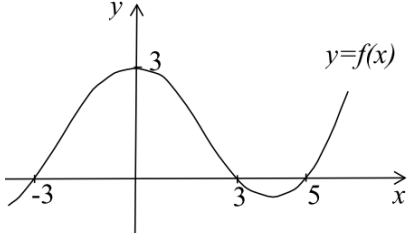
- A) {1} B) {1,2} C) {1,5}
 D) {1,6} E) {1,2,5}

17. إذا كان $P(x-1) = 2x^3 - 2x^2 + 3x + 4$ ما هو الباقي من قسمة $p(x)$ على $(x-2)$ ؟
 A) 49
 B) 18 C) 7 D) -18 E) -49

18. $f(x) = 2x + m \Rightarrow (f \circ f \circ f)(x) = ?$

- A) $6x + 3m$ B) $6x + m$ C) $8x + m$
 D) $8x + 3m$ E) $8x + 7m$

19.



$$(g \circ f)(x) = x^2 - 7x + 10 \Rightarrow g(3) = ?$$

- A) -2 B) 0 C) 2 D) 10 E) 40

$$20. \quad 1 + 4 \cos^2 x \sin^2 x + \cos^2 2x = ?$$

- A) 2 B) $1 + 2 \cos^2 2x$ C) $2 \sin^2 2x$
 D) 0 E) $2 + \cos^2 2x$

$$21. \quad z = -2 + i \Rightarrow |z^4| = ?$$

- A) 3 B) 5 C) 9 D) 25 E) 36

$$22. \quad z = 1 - i \Rightarrow \frac{z^2 - 1}{\bar{z} - 2i} = ?$$

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

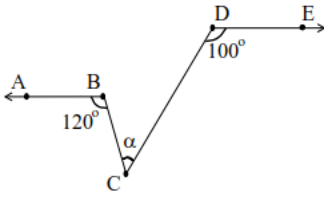
$$23. \quad \log_3 2 = a \Rightarrow \log_6 4 = ?$$

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

$$24. \quad \log_4 [14 + \log_5 (6x + 1)] = 2 \Rightarrow x = ?$$

- A) 6 B) 4 C) 3 D) 2 E) 1

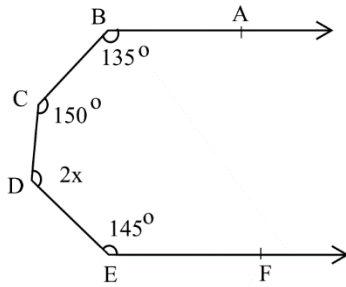
25.



$$\left. \begin{array}{l} [AB] // [DE] \\ m(\widehat{ABC}) = 120^\circ \\ m(\widehat{CDE}) = 100^\circ \end{array} \right\} \Rightarrow \alpha = ?$$

- A) 20° B) 40° C) 100° D) 120° E) 220°

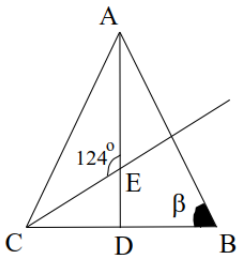
26.



$$\left. \begin{array}{l} [BA] // [EF] \\ m(\widehat{ABC}) = 135^\circ \\ m(\widehat{BCD}) = 150^\circ \\ m(\widehat{DEF}) = 145^\circ \\ m(\widehat{CDE}) = 2x \end{array} \right\} \Rightarrow x = ?$$

- A) 40° B) 45° C) 50° D) 55° E) 110°

27.

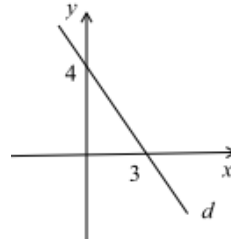


إن $|AC|=|AB|$
 [AD] هو المتوسط
 [CE] هو المنصف،
 و $m(\widehat{CEA})=124^\circ$
 عندئذ $\beta = ?$

A)

- 28° B) 34° C)
 56° D) 68° E) 124°

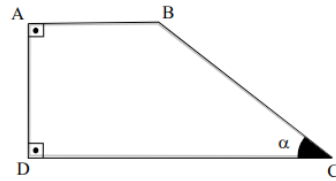
28.



أي من التالي هو معادلة الخط d في الشكل أعلاه؟

- A) $x + y - 3 = 0$ B) $x + y - 4 = 0$
 C) $3x + 4y - 12 = 0$ D) $4x + 3y - 3 = 0$
 E) $4x + 3y - 12 = 0$

29.

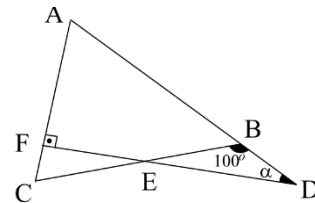


ABCD هو شبه منحرف،

$$\left. \begin{array}{l} |AB| = 3\text{cm}, \\ |DC| = 7\text{cm}, \\ A(ABCD) = 20\text{cm}^2 \end{array} \right\} \Rightarrow \alpha = ?$$

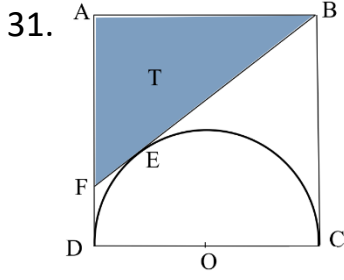
- A) 20° B) 30° C) 45° D) 60°
 E) 75°

30.



$$\left. \begin{array}{l} |AB| = |BC|, \\ [DF] \perp [AC], \\ m(\widehat{DBC}) = 100^\circ \end{array} \right\} \Rightarrow \alpha = ?$$

- A) 20° B) 30° C) 40° D) 50°
 E) 60°



يظهر الشكل المربع ABCD بطول الضلع 4 سم.
القطعة المستقيمة [BF] هي المماس عند النقطة E
لشبه الدائرة ذات المركز O. ماهي مساحة القطعة
المظللة [T] بالسم²؟

- A) $4 - \pi$ B) 4 C) 6 D) $16 - \pi$ E) $16 - 4\pi$

32. $\lim_{x \rightarrow 1} \frac{\ln x}{x - 1} = ?$

- A) -1 B) 0 C) 1 D) 2 E) $\ln 2$

33. $f(x) = 3x^2 - \sin x \Rightarrow f'(0) = ?$

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

34. أي من التالي هو منحدر خط المماس للمنحنى
 $f(x) = \ln(x^2 + 2x + 1)$ عند النقطة $x = 1$ ؟

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

35. $\left. \begin{array}{l} x = 2 \cos 2t \\ y = e^t - t^2 \end{array} \right\} \Rightarrow \frac{dy}{dx} = ?$

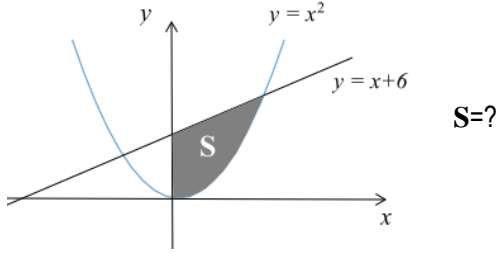
- A) $\frac{e^t - 2t}{2 \sin 2t}$ B) $e^t - 2t$ C) 2 D) $-4 \sin 2t$

E) $-\frac{e^t - 2t}{4 \sin 2t}$

36. $\int_1^e (\ln x + 1) dx = ?$

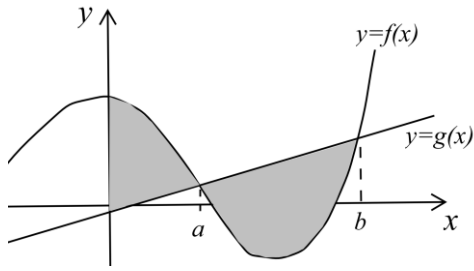
- A) 1 B) e C) $e - 1$ D) $1 - e$ E) $2e - 1$

37.



- A) 3 B) $\frac{9}{2}$ C) 9 D) $\frac{27}{2}$ E) 27

38.



أي من التالي يمثل المساحة المظللة في الشكل؟

- A) $\int_0^a [f(x) - g(x)] dx$
 B) $\int_0^b [f(x) - g(x)] dx$
 C) $\int_0^a |f(x) - g(x)| dx$
 D) $\int_0^b |f(x) - g(x)| dx$
 E) $\int_a^b |f(x) - g(x)| dx$

39. $A = \begin{bmatrix} 1 & -1 \\ 2 & -1 \end{bmatrix} \Rightarrow 2A^{-1} + A = ?$

- A) $\begin{bmatrix} -1 & 1 \\ -2 & 1 \end{bmatrix}$ B) $\begin{bmatrix} 1 & -1 \\ -2 & 1 \end{bmatrix}$
 C) $\begin{bmatrix} -1 & -1 \\ -2 & 1 \end{bmatrix}$ D) $\begin{bmatrix} -1 & 1 \\ -2 & -1 \end{bmatrix}$
 E) $\begin{bmatrix} 0 & 1 \\ -2 & 1 \end{bmatrix}$

40. $A = \begin{bmatrix} 1 & 2 & -1 \\ 0 & 1 & 0 \\ 1 & -2 & 0 \end{bmatrix} \Rightarrow A^2 = ?$

- A) $\begin{bmatrix} 1 & 2 & -1 \\ 0 & 1 & 0 \\ 1 & -2 & 0 \end{bmatrix}$ B) $\begin{bmatrix} 0 & 6 & -1 \\ 0 & 1 & 0 \\ 1 & -2 & 0 \end{bmatrix}$
 C) $\begin{bmatrix} 0 & 6 & -1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$ D) $\begin{bmatrix} 0 & 6 & -1 \\ 0 & 1 & 0 \\ 1 & 0 & -1 \end{bmatrix}$
 E) $\begin{bmatrix} 0 & 6 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$

1. I. 142 → 10
 II. 253 → 21
 III. 318 → 32
 IV. 474 → 44
 V. 584 → ?

A) 36 B) 40 C) 44 D) 48 E) 52

2. I. 152 → 4
 II. 342 → 5
 III. 325 → 0
 IV. 543 → 6
 V. 617 → 0
 VI. 825 → ?

A) 5 B) 3 C) 1 D) 0 E) -1

3. I. 1052 → 8
 II. 3142 → 10
 III. 3405 → 12
 IV. 3424 → 13
 V. 4154 → 14
 VI. 4355 → ?

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

4. 25716 → 65172
 34621 → 14263
 47837 → ?

A) 83747

B) 74783

C) 77384

D) 48737

E) 77834

5.

$$2 \nabla 5 = 7$$

$$3 \nabla 2 = 5$$

$$4 \nabla 6 = 10$$

$$5 \nabla 3 = 8$$

$$6 \Delta 1 = ?$$

A) 6

B) 7

C) 8

D) 9

E) 10

6.

$$3\Delta 4 = 2$$

$$3\Delta 2 = 4$$

$$4\Delta 2 = 6$$

$$5\Delta 4 = 6$$

$$6\Delta 3 = ?$$

A) 6

B) 7

C) 8

D) 9

E) 10

7.

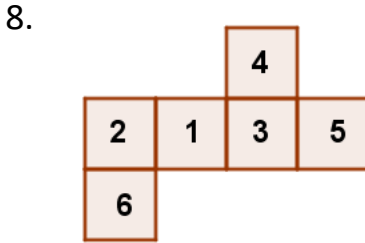
+	x	y	z
x			
y	z+5		
z		x-1	

·	x	y	z
x		$\frac{z}{2}$	
y			
z			

تحتوي الجداول أعلاه على عمليات الجمع و الضرب المعرفة بالأرقام الصحيحة، حيث يمثل كل من X, y, z قيمة فريدة.

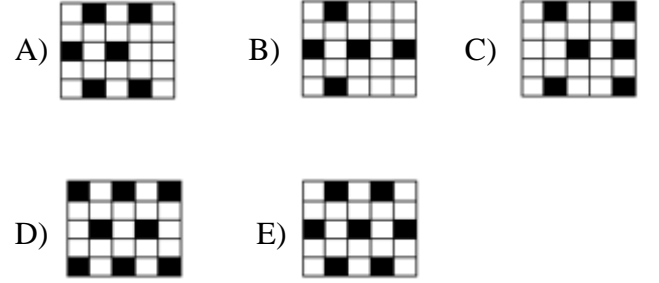
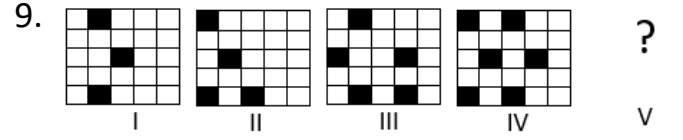
وفقاً لذلك ما هو: $\frac{x}{z} = ?$

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



إذا تم طي الشكل أعلاه إلى مكعب، فما مجموع الأرقام المجاورة لـ "5"؟

- A) 5 B) 10 C) 13 D) 14 E) 15



10.

$$\triangle + \triangle + \star = 30$$

$$\star + \star - \square = 12$$

$$\square + \square + \square = 12$$

$$\triangle + \star - \square = ?$$

- A) 5 B) 10 C) 13 D) 14 E) 15

11.

	$\left. \begin{array}{l} \\ \\ \\ \\ \end{array} \right\}$	3274	5238
			4726
		8742	2754

☆ □ ▽ ■ = ?

- A) 5342 B) 3254 C) 4352
 D) 2345 E) 2453

12.

$\left. \begin{array}{l} 3265 \\ 6417 \\ 2574 \\ 6425 \\ 2141 \end{array} \right\}$	◇ ○ ◆ ☆ ★ ◇ ■ ○
	◇ □ ☆ □
	■ ☆ □ ◆ ■ ☆ ◇ ○

○ ☆ ■ ◇ = ?

- A) 5432 B) 6435 C) 5462
 D) 5461 E) 6542

13.

AEH → AE
 ECP → ?

- A) B) C)
 D) E)

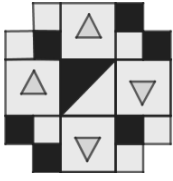
14.

x →

+ → ?

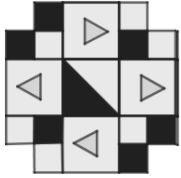
- A) B) C)
 D) E)

15.

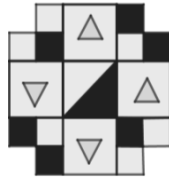


ئل أعلاه بـ 270° درجة عكس
، فما الشكل الذي سيحصل عليه؟

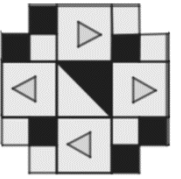
A)



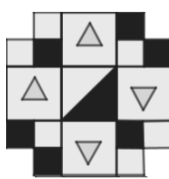
B)



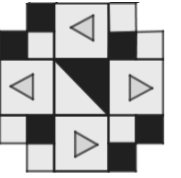
C)



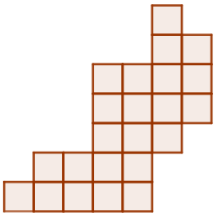
D)



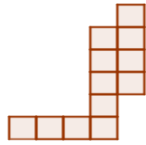
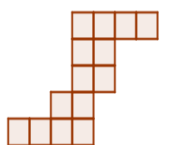
E)



16.



أي من التالي هو المفقود في الشكل؟



A)

B)

C)

D)

E)

17.

<i>ELMA</i>	}	3454
<i>MASA</i>		8474
<i>LEKE</i>		5489
<i>YAKA</i>		1272
<i>SAYI</i>		2134

KAMELYA=?

A) 7458154

B) 8458174

C) 7432184

D) 3458174

E) 7438154

18.

3	5	8	1
4	2	3	5
2	X	5	6
5	6	1	4

X = ?

A) 2

B) 3

C) 4

D) 5

E) 6

19.

5	1	3	9
3	2	7	12
2	1	5	8
4	2	X	9

X = ?

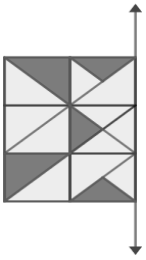
A) 1 B) 2 C) 3 D) 4 E) 6

20. 1, 5, 3, 8, 12, 10, 15, 19, 17, X, ...

X = ?

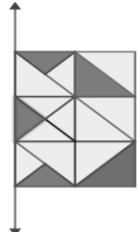
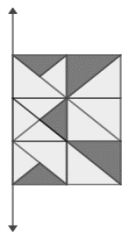
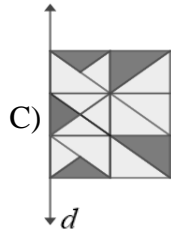
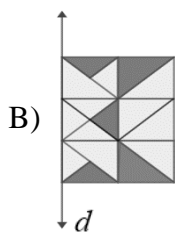
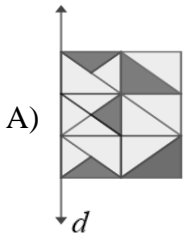
A) 13 B) 15 C) 20 D) 21 E) 22

21.



d

أي من التالي هو الوضع المناظر للشكل بالنسبة
للخط d ?



D)

E)

d

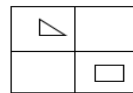
d

22. 5, 6, 8, 11, 15, 20, 26, X, ...

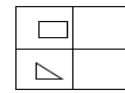
X = ?

A) 32 B) 33 C) 34 D) 35 E) 36

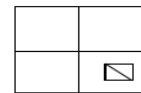
23.



I



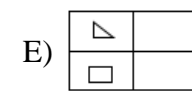
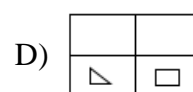
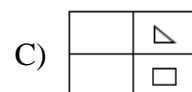
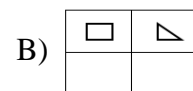
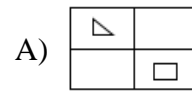
II



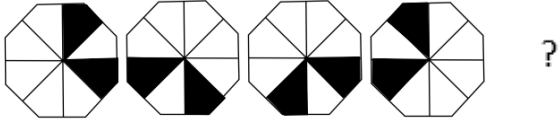
III

?

IV

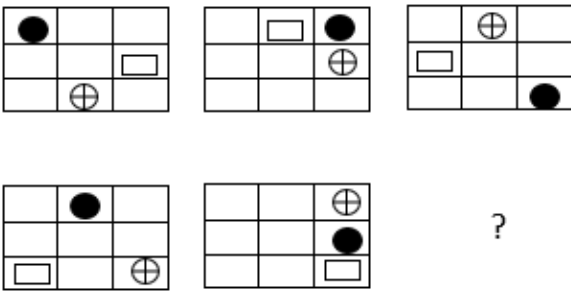


24.



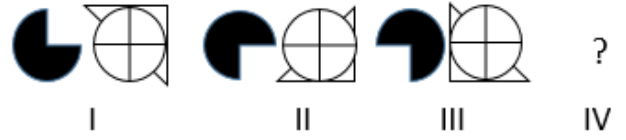
- A) B) C)
- D) E)

25.



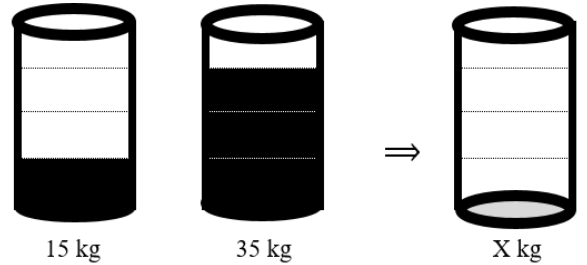
- A) B)
- C) D)
- E)

26.



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

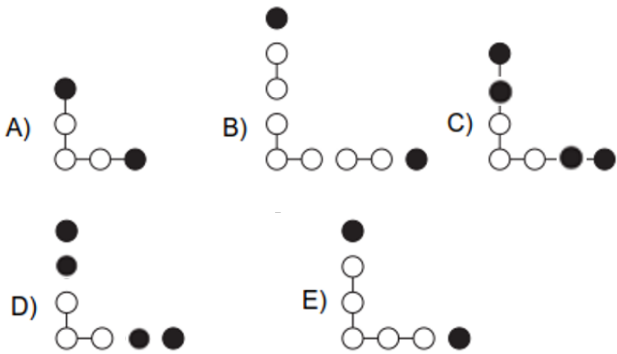
27.



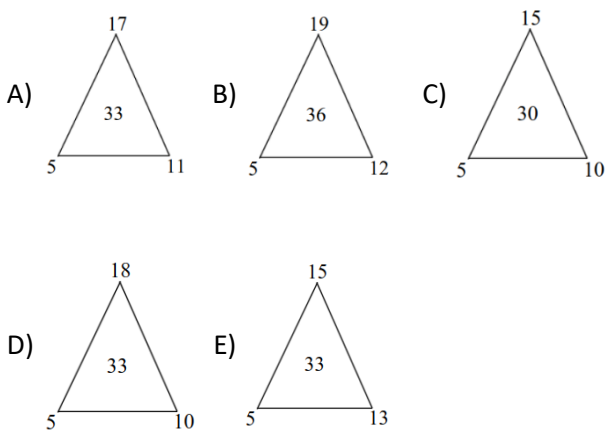
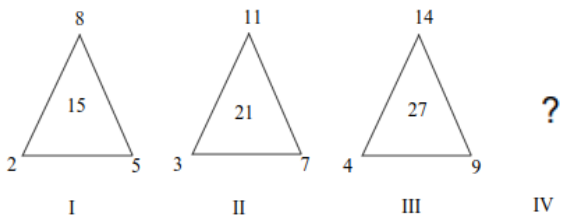
X = ?

- A) 3 B) 4 C) 5 D) 7 E) 10

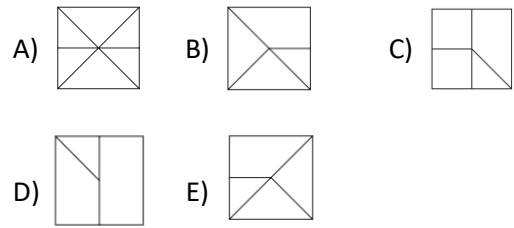
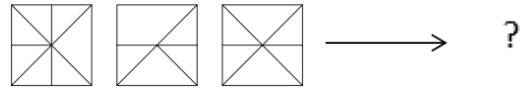
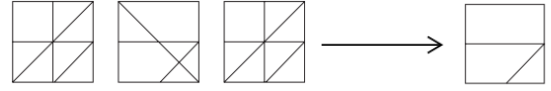
28.



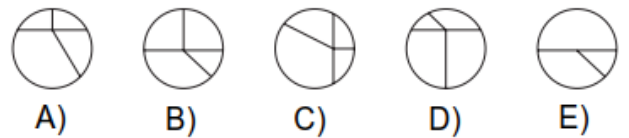
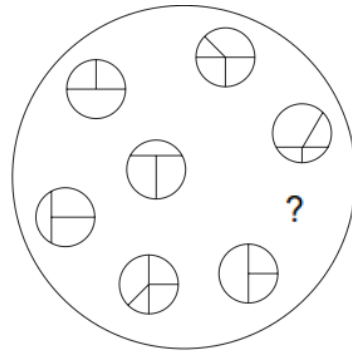
29.



30.



31.



32.

4	10
20	8

7	16
32	14

6	14
28	12

8	?
?	?

- A)

	18
36	16

 B)

	17
34	15

 C)

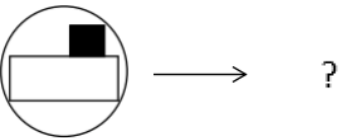
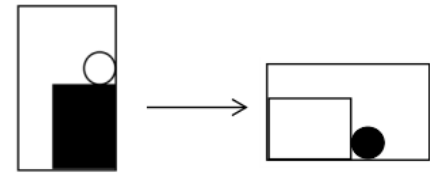
	12
22	10
- D)

	20
40	16

 E)

	19
38	16

33.



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

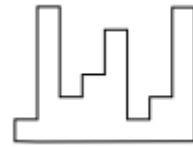
34.

		3	4	5		
	1	4	8	6	5	
2	1	4	8	2	3	4
	6	1	9	3	8	
		4	X	6		

X = ?

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

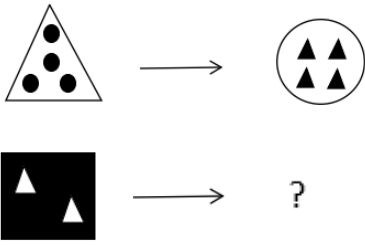
35.



أي من التالي يجب أن يوضع في الشكل أعلاه ليكملة إلى مربع؟

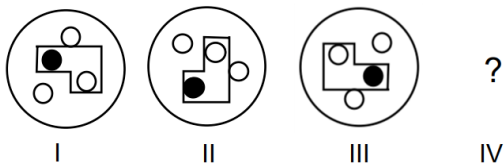
- A)
- B)
- C)
- D)
- E)

36.



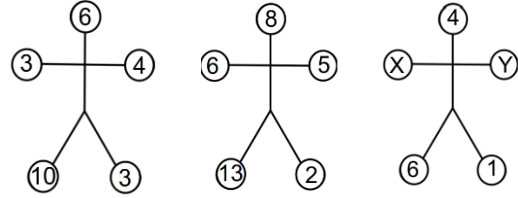
- A) B) C)
 D) E)

37.



- A) B) C)
 D) E)

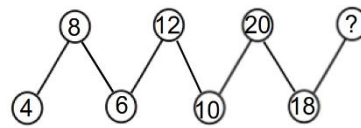
38.



$X+Y=?$

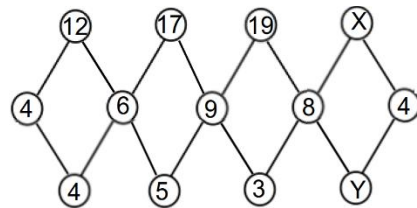
- A) 3 B) 4 C) 5 D) 6 E) 7

39.



- A) 32 B) 34 C) 36 D) 38 E) 40

40.



$X-Y=?$

- A) 5 B) 6 C) 8 D) 10 E) 12

1- B
2- B
3- E
4- E
5- D
6- C
7- A
8- E
9- D
10- B
11- B
12- E
13- C
14- A
15- A
16- E
17- A
18- E
19- D
20- A
21- D
22- E
23- A
24- B
25- B
26- E
27- D
28- E
29- C
30- C
31- C
32- C
33- A
34- A
35- E
36- B
37- D
38- D
39- A
40- D

1- E
2- A
3- B
4- C
5- B
6- D
7- C
8- E
9- E
10- E
11- D
12- C
13- C
14- A
15- C
16- C
17- C
18- C
19- C
20- E
21- D
22- B
23- B
24- A
25- E
26- A
27- C
28- E
29- A
30- E
31- C
32- A
33- A
34- B
35- B
36- C
37- D
38- C
39- C
40- C

By yoslovers