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همراه شما
در مسیر یوس

سوالات یوس ۲۰۱۸
دانشگاه اینونو

Inonu University

INTERNATIONAL STUDENTS' EXAM

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۰۲۱۹۱۳۰۵۹۰۵
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1. $\frac{a}{b} = -2 \Rightarrow \frac{2b}{a} - \frac{3a}{b} = ?$

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

2. $\left.\begin{matrix} 2a = 3b \\ 4b = 5c \end{matrix}\right\}$ اگر است،

پس کدام یک از گزینه‌های زیر درست است؟

A) $a < b < c$ B) $a < c < b$

C) $c < a < b$ D) $b < c < a$

E) $c < b < a$

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

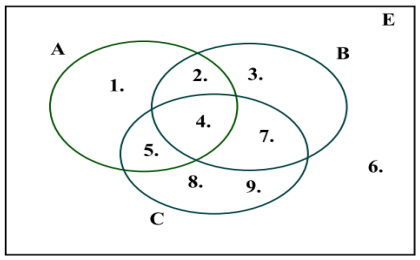
A) -4 B) -2 C) 2 D) 4 E) 5

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

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

5. در حالی که 3 کارگر 200 واحد کار را با روزی 8 ساعت کاری در طی 5 روز تمام می کنند، 4 کارگر برای تکمیل 300 واحد کار در طی 5 روز باید روزی چند ساعت کار بکنند؟

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

6. 

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

A) $\{1\}$ B) $\{1,2\}$ C) $\{1,5\}$

D) $\{1,6\}$ E) $\{1,2,5\}$

مدرس: سعادت آباد

7. $\frac{0,1\overline{6}}{0,\overline{33}} = ?$

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

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

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

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

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

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

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

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

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

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

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

مدرسین سعادت آباد

13. $\sqrt{a-\sqrt{a-\sqrt{a-\cdots}}} = \sqrt[3]{9\sqrt[3]{9\sqrt[3]{9\ \ldots}}}$

$\Rightarrow\ a=?$

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

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

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

15. $3<x<5 \ \Rightarrow\ \frac{|(x-2)(x-5)|+x-5|}{x^2-4x+3}=?$

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) $\frac{x-5}{x-3}$

16. $f(x,y)=x^y-y^x \ \Rightarrow\ f(f(3,1),2)=?$

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

17. اگر $p(x-1)=2x^3-2x^2+3x+4$ است

تقسیم پولینوم $p(x)$ بر پولینوم $(x-2)$ چند می شود؟

A) 49 B) 18 C) 7 D) -18 E) -49

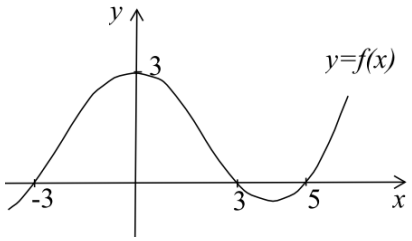
18. $f(x)=2x+m \ \Rightarrow\ (fofof)(x)=?$

A) $6x+3m$ B) $6x+m$ C) $8x+m$

D) $8x+3m$ E) $8x+7m$

مدرسان سعادت آباد

19.



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

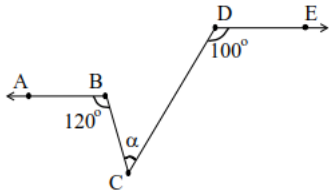
A) -2 B) 0 C) 2 D) 10 E) 40

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

A) 2 B) $1 + 2\cos^2 2x$ C) $2\sin^2 2x$

D) 0 E) $2 + \cos^2 2x$

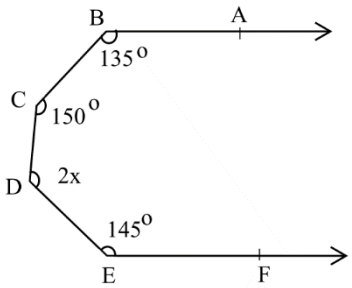
21.



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

A) 20° B) 40° C) 100° D) 120° E) 220°

22.

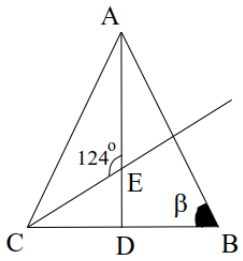


$\left.\begin{matrix}[BA] // [EF] \\ m(\widehat{ABC}) = 135^\circ \\ m(\widehat{BCD}) = 150^\circ \\ m(\widehat{DEF}) = 145^\circ \\ m(\widehat{CDE}) = 2x\end{matrix}\right\} \implies x = ?$

A) 40° B) 45° C) 50° D) 55° E) 110°

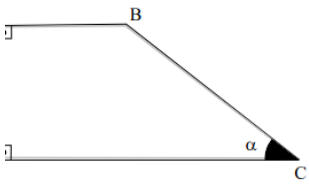
مروارید سعادت آباد

23.



$|AC|=|AB|$ اگر
[AD] میانه
و [CE] نیمساز است
$m(CEA)=124°$,
$\beta=?$ پس

A) 28° B) 34° C) 56° D) 68° E) 124°



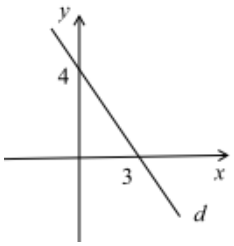
ABCD یک ذوزنقه است

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

A) 20° B) 30° C) 45° D) 60°

E) 75°

24.



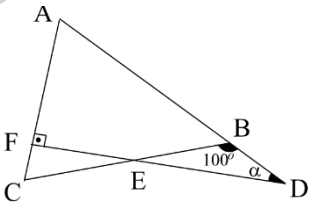
محور d در نمودار، کدام یکی از گزینه‌های زیر می باشد؟

A) $x+y-3=0$ B) $x+y-4=0$

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

E) $4x+3y-12=0$

26.

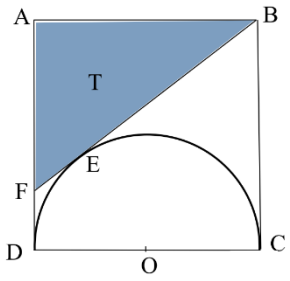


$$\left.\begin{array}{l}|AB|=|BC|,\\ [DF]\perp[AC],\\ m(\widehat{DBC})=100^\circ\end{array}\right\} \Rightarrow \alpha=?$$

A) 20° B) 30° C) 40° D) 50°

E) 60°

مدرویل سعادت آباد

27. 

در نمودار مربعABCD دیده می شود که طولانی کناری اش 4 سانت است. محور BF به نیم دایره‌ای با مرکزیت O در نقطه ی E مماس است. مساحت منطقه ی سایه دار T چند سانتیمتر مربع می باشد؟

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

28. $z=-2+i \implies |z^4|=?$

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

29. $z=1-i \implies \dfrac{z^2-1}{\bar{z}-2i}=?$

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) $\frac{1}{2}-\frac{3}{2}i$

30. $log_3 2=a \implies log_6 4=?$

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

D) $\frac{a}{2+a}$ E) $\frac{2+a}{1+a}$

31. $log_4[14+log_5(6x+1)]=2 \implies x=?$

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

مروین سعادت آباد

32. $\lim\limits_{x\to 1} \dfrac{\ln x}{x-1} = ?$

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

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

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

34. $x = 1$ در نقطه $f(x) = \ln(x^2 + 2x + 1)$ شیب خط مماس منحنی کدام یک از گزینه های زیر است؟

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

35. $\left.\begin{matrix} x = 2\cos 2t \\ y = e^t - t^2 \end{matrix}\right\} \implies \dfrac{dy}{dx} = ?$

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

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

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

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

مدرویل سعادت آباد

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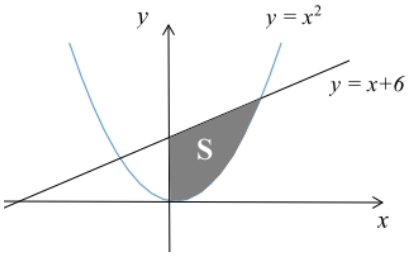
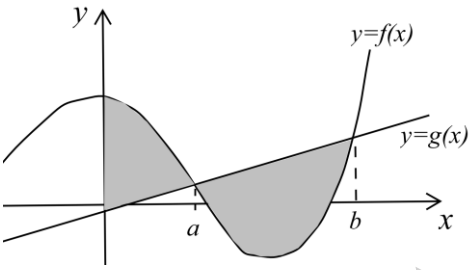
37.



S=?

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

38.



منطقه سایه دار در نمودار با کدام یکی از موارد زیر نشان داده شده است؟

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

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) $\begin{bmatrix}0 & 6 & 1\\ 0 & 1 & 0\\ 1 & 0 & 0\end{bmatrix}$

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

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) $\begin{bmatrix}0 & 1\\ -2 & 1\end{bmatrix}$

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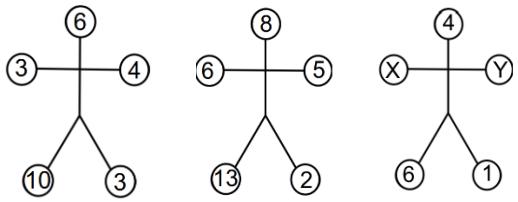
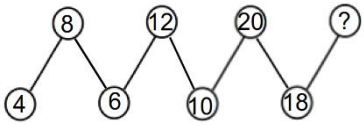
1.



X+Y=?

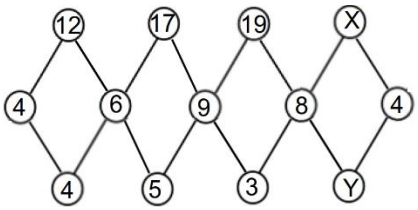
A) 3 B) 4 C) 5 D) 6 E) 7

2.



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

3.



X-Y=?

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

4.

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

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

مرویل سعادت آباد

5.
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

6.
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

7.
25716 ⟶ 65172
34621 ⟶ 14263
47837 ⟶ ?

A) 83747 B) 74783 C)77384
D) 48737 E) 77834

8.
$2 \nabla 5 = 7$
$3 \nabla 2 = 5$
$4 \nabla 6 = 10$
$5 \nabla 3 = 8$
$6 \Delta 1 = ?$

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

مترویل سعادت آباد

9.

$3\Delta 4 = 2$

$3\Delta 2 = 4$

$4\Delta 2 = 6$

$5\Delta 4 = 6$

$6\Delta 3 = ?$

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

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

X=?

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

11. 5, 6, 8, 11, 15, 20, 26, X,…

X=?

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

12.

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

·	x	y	z
x		$\frac{z}{2}$	
y			
z			

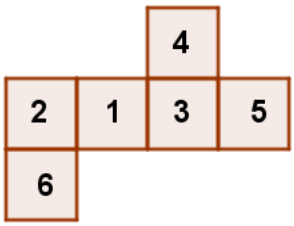
در اعداد کامل بالا عمل های جمع و ضرب و در جدول ها حرف های x ، y و z هر یکی در مقابل یک عدد می باشند.

بر اساس این $\frac{x}{z}$ چند است؟

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

مروارید سعادت آباد

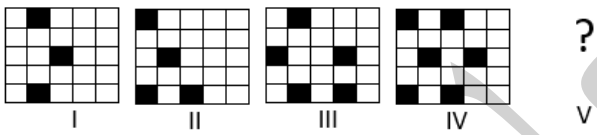
13.

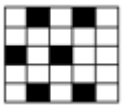
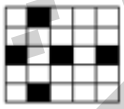
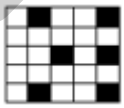


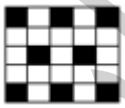
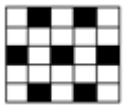
اگر شکل بالا به یک مکعب در آورده شود مجموعه‌ی عددها که همسایه ی عدد 5 می باشند چند می شود؟

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

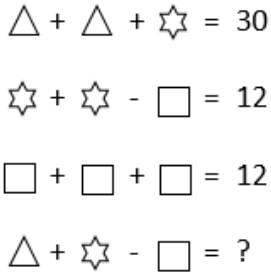
14.



A)  B)  C) 

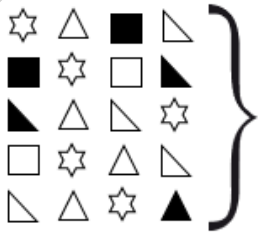
D)  E) 

15.



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

16.



3274 5238

4726

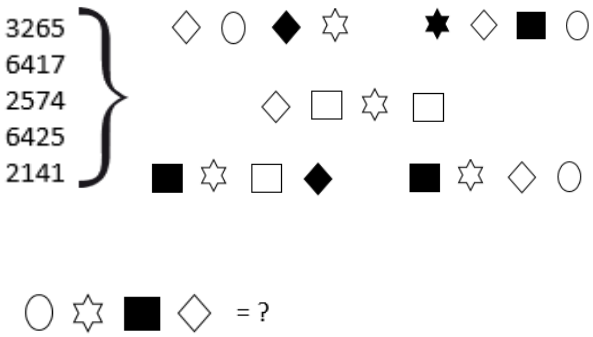
8742 2754

A) 5342 B) 3254 C) 4352

D) 2345 E) 2453

مژگان سعادت آباد

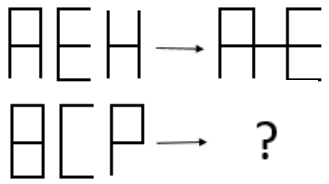
17.

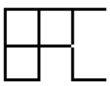


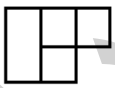
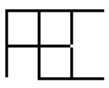
A) 5432 B) 6435 C) 5462

D)5461 E)6542

18.



A) B) C) 

D)  E) 

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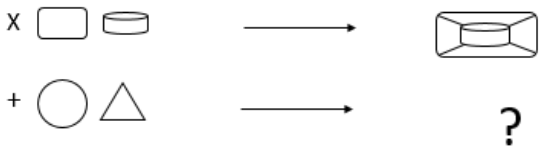
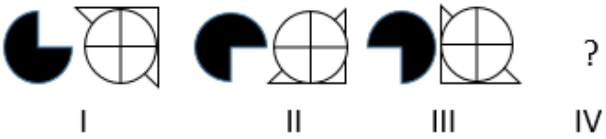
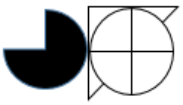


A) B) C)

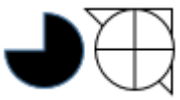
D) E)

20.



A)  B)

C) D)

E) 

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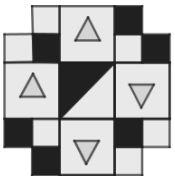
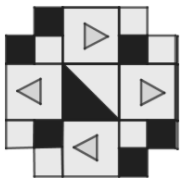
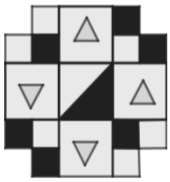
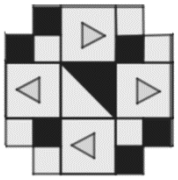
21.

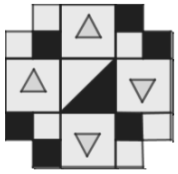


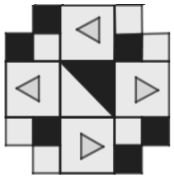
تنظیم شده ی شکل در جهت مخالف ساعت
های زیر می باشد؟

A) 

B) 

C) 

D) 

E) 

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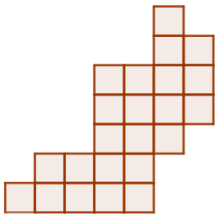
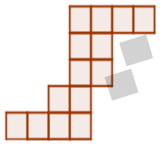
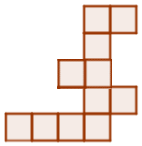
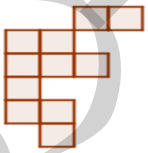


یکی از گزینه‌های زیر موجود نیست؟

A) 

C) 

D) 

E)

23.

ELMA	3454
MASA	8474
LEKE	5489
YAKA	1272
SAYI	2134

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KAMELYA=?

A) 7458154 B) 8458174 C) 7432184

D) 3458174 E) 7438154

24.

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

25.

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

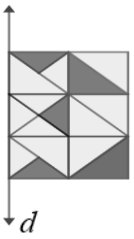
X = ?

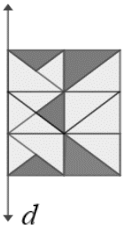
A) 1 B) 2 C) 3 D) 4 E) 6

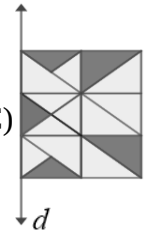
26.

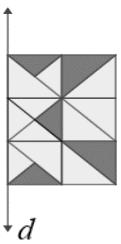
d

با توجه به محور d شکل کدام یکی از گزینه های زیر تقارن (سیمتریک) می باشد؟

A) 

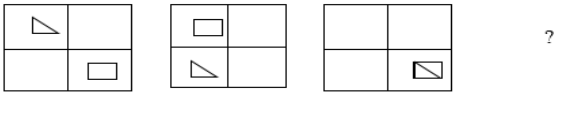
B) 

C) 

D) 

E)

27.



I II III ? IV

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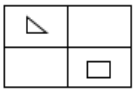
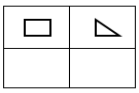
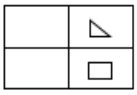
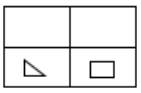
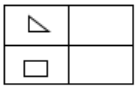
A)  B) 

C)  D) 

E) 

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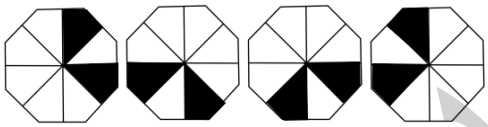
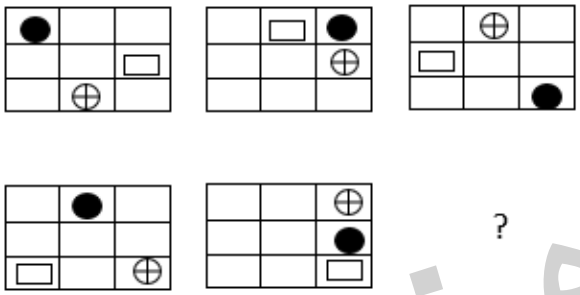


A) B) C)

D) E)

29.



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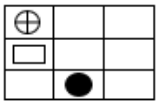
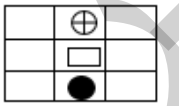
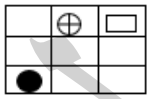
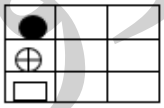
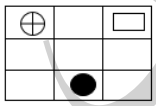
A)  B) 

C)  D) 

E) 

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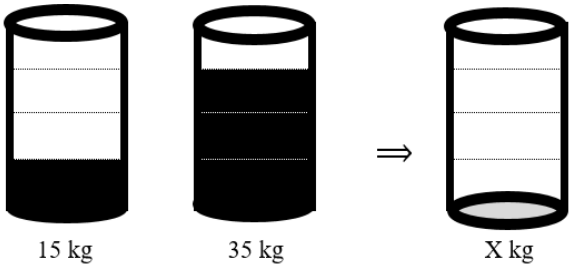

X =?

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

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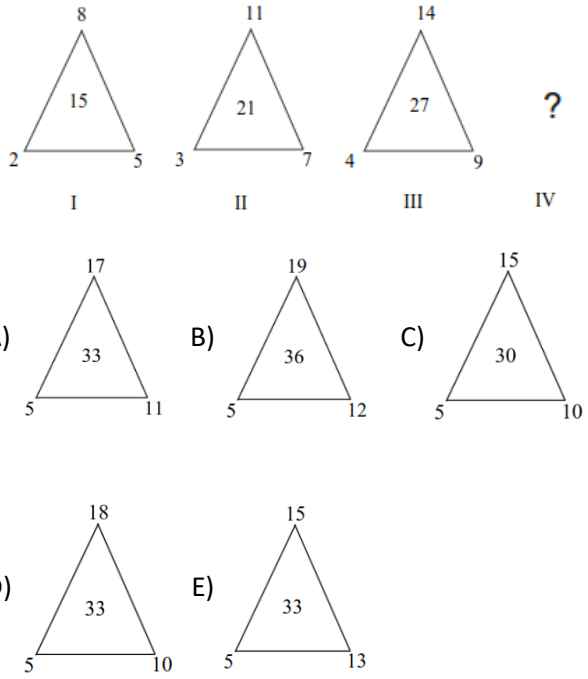
31.



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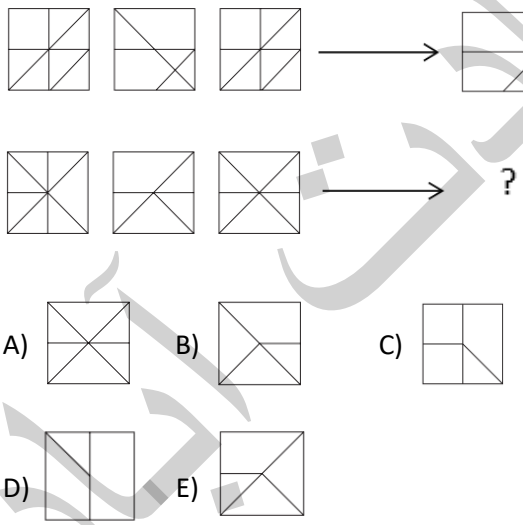

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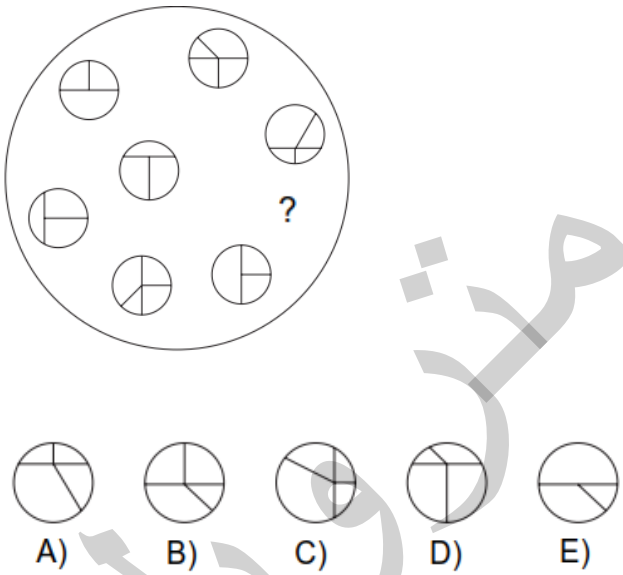

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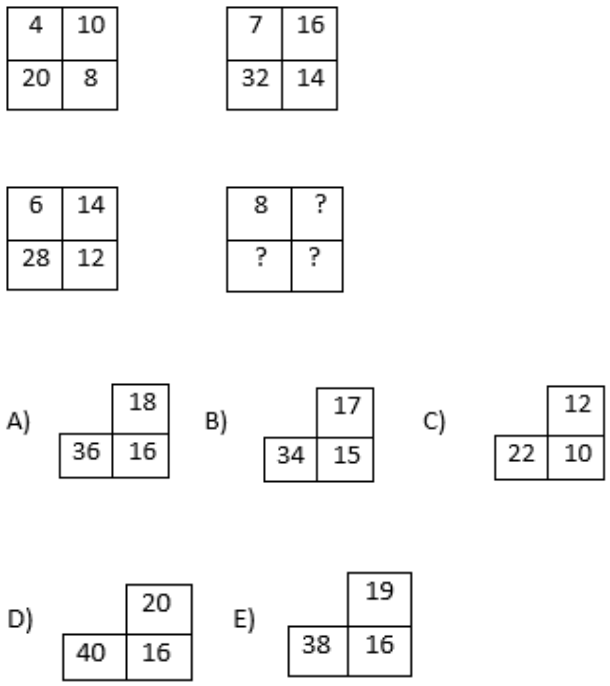

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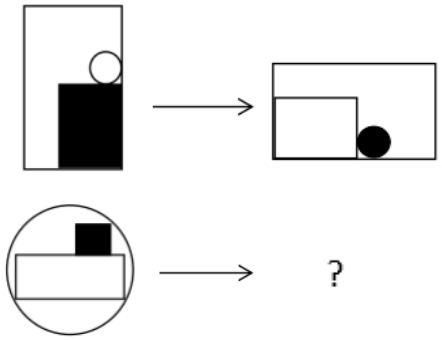
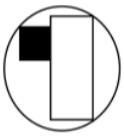
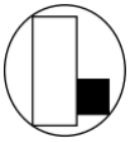


A)
B)
C)
D) 
E) 

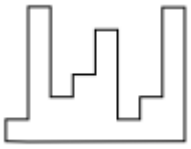
36.

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

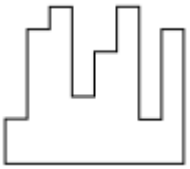
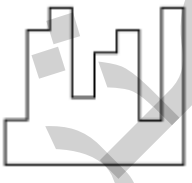
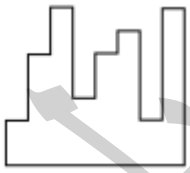
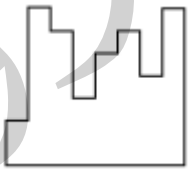
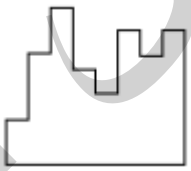
X = ?

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

37.



ی زیر شکل بالا را مربع کامل می کند؟

A) 
B) 
C) 
D) 
E) 

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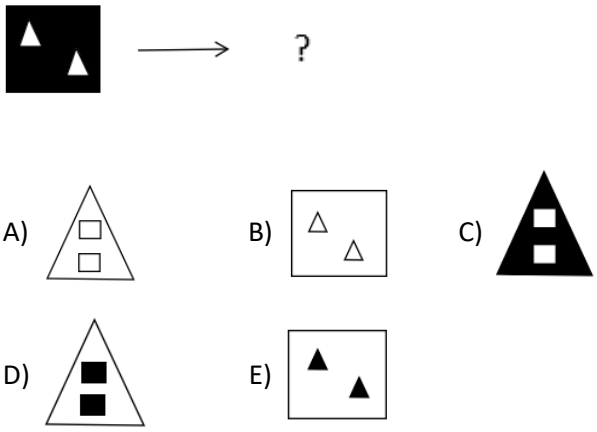

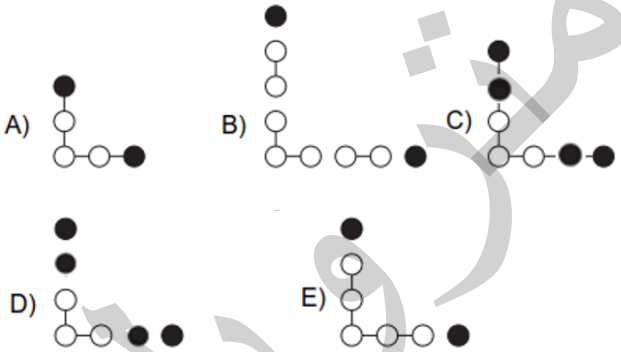

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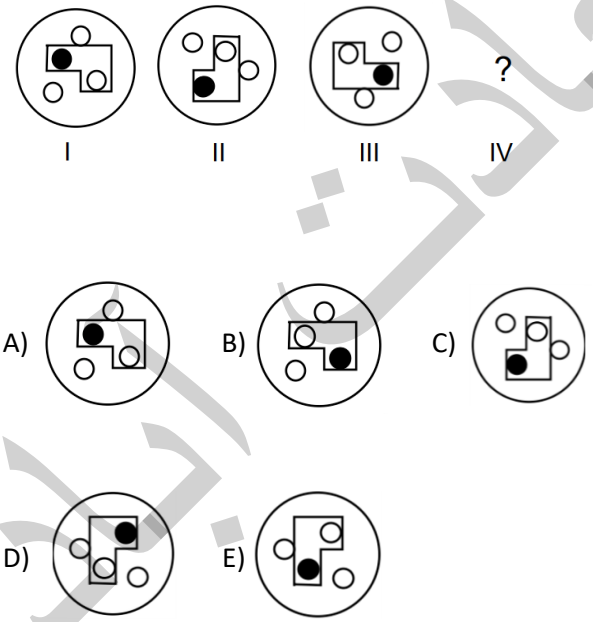

40.

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