



سعادت آباد - بلوار دریا - روبروی خیابان صرافها - پلاک 54 - واحد 10





# İNÖNÜ ÜNİVERSİTESİ

Uluslararası Öğrenci Ofisi/International Students Office

INU-YOS

2023

## İNÖNÜ ÜNİVERSİTESİ ULUSLARARASI ÖĞRENCİ SINAVI INONU UNIVERSITY INTERNATIONAL STUDENTS' EXAM

جامعة إينونو امتحان اليوس  
آزمون يوس دانشگاه اینونو

Aday No  
Candidate Number

رقم الطالب  
شماره

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Adı Soyadı  
Name Surname

الاسم واسم العائلة  
نام و نام خانوادگی

.....

İmza  
Signature

التوقيع  
امضا

.....

Kitapçık • Booklet • الزمرة • کتابچه

# A

Bu testlerin her hakkı saklıdır. Hangi amaçla olursa olsun, testlerin tamamının veya bir kısmının İNÖNÜ ÜNİVERSİTESİ'nin yazılı izni olmadan kopya edilmesi, fotoğrafının çekilmesi, herhangi bir yolla çoğaltılması, yayımlanması ya da kullanılması yasaktır. Bu yasağa uymayanlar, gerekli cezai sorumluluğu ve testlerin hazırlanmasındaki mali külfeti peşinen kabullenmiş sayılır.

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| <p style="text-align: center;"><b>ACIKLAMA</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p style="text-align: center;"><b>EXPLANATION</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Bu soru kitapçığı Türkiye'deki belirli üniversitelerde öğrenim görmek isteyen uluslararası öğrencileri seçme amacıyla hazırlanmış soruları içermektedir. Bu testlerin soru adetleri şöyledir:<br/>Matematik 40<br/>Temel Öğrenme Becerileri 40</p> <p>2. Bu soru kitapçığının türü A'dır. Kitapçık türünü cevap kâğıdınızdaki ilgili yere aşağıda gösterilen şekilde kodlayınız ve salon görevlisinin de ilgili yere kodladığınız bilgiyi onaylamasını sağlayınız. Bu kodlamayı cevap kâğıdınıza yapmadığınız veya yanlış yaptığınız takdirde, sınavınızın değerlendirilmesi mümkün değildir.</p> <p>3. Sınavda adaylara toplam 120 dakika süre verilmiştir.</p> <p>4. Test kitapçığındaki her sorunun yalnızca bir doğru cevabı vardır. Bir soru için birden fazla cevap yeri işaretlenmişse o soru yanlış cevaplanmış sayılacaktır.</p> <p>5. Soruların cevaplarını kitapçıkla birlikte verilen cevap kâğıdında ayrılan yerlere kurşun kalemle işaretleyiniz. Cevap kâğıdını buruşturmayınız, üzerine gereksiz hiçbir işaret koymayınız.</p> <p>6. Cevap kâğıdında soruların cevapları doğru biçimde işaretlenmediğinde optik okuyucu cevabı algılayamayacaktır. Yanlış işaretlemelerden kaynaklanan hatalardan aday sorumludur.</p> <p>7. Adayların net puanları, YÖS2023'de uygulanacak testte yer alan sorulara verdikleri doğru ve yanlış cevapları sayılarak doğru cevap sayısından yanlış cevap sayısının dörtte biri çıkarılarak (dört yanlışın bir doğrusu götürmesi) hesaplanır.</p> <p>8. Sınavda uyulacak diğer kurallar bu kitapçığın arka kapağında belirtilmiştir.</p> | <p>1. This booklet includes multiple-choice questions for international students who wish to study in certain Turkish universities.</p> <p>The number of questions in each test is as follows:<br/>Mathematics 40<br/>Basic Learning Skills 40</p> <p>2. This is a "A" type booklet. Please mark the type of your booklet on the answer sheet and make sure it has been confirmed by the exam supervisor. If you do not code the type of booklet correctly or at all on the answer sheet, your exam will be invalid.</p> <p>3. You have 120 minutes to complete the exam.</p> <p>4. Each question has only one correct answer. Multiple selections will be considered incorrect.</p> <p>5. Mark your answers to the questions on the answer sheet provided with this booklet with a soft lead pencil. Do not fold the answer sheet and do not make any unnecessary markings on the answer sheet.</p> <p>6. Inappropriate markings on the answer sheet will not be recognized by the optical reader. The candidates are responsible for the mistakes resulting from any inappropriate markings.</p> <p>7. The valid number of correct answers in YÖS2023 exam will be calculated after subtracting the one fourth of the number of wrong answers from total number of correct answers (i.e. four wrong answers eliminate one correct answer).</p> <p>8. Further information about the examination rules are printed on the back cover of this booklet.</p> |
| <p style="text-align: center;"><b>البيانات المهمة</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p style="text-align: center;"><b>توضیحات</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p>1 هذا الكتيب يحتوي على أسئلة لامتحان الطلاب الذين يرغبون في الدراسة في بعض الجامعات التركية. عدد الأسئلة في هذا الكتيب كما يأتي</p> <p>a الرياضيات: 40 سؤالاً</p> <p>b المهارات التعليمية الأساسية: 40 سؤالاً</p> <p>2 زمرة هذا الكتيب A، اكتب زمرة الكتيب في المكان المخصص له. واطلب من الموظف في القاعة التأكد والتوقيع. إذا لم تضع الإشارة على زمرة الكتيب أو لم تختار الزمرة الصحيحة سيكون امتحانك غير مقبول.</p> <p>3 مدة الاختبار 120 دقيقة</p> <p>4 لكل سؤال من الأسئلة جواب صحيح واحد. وإذا وضعت الإشارة على جوابين أو أكثر فالسؤال سيُعدّ خطأ.</p> <p>5 اكتبوا الأجوبة في ورقة الإجابة في المكان الخاص بها. ولا تطوا ورقة الإجابة، ولا تضعوا عليها أي إشارة غير مطلوبة.</p> <p>6 إذا لم تُوضع الإشارة في مكان الجواب بشكل صحيح فجهاز التصحيح الإلكتروني لا يستطيع القراءة صحيحاً. ولذلك الأخطاء الصادرة من الإشارة الخطأ مسؤوليتها تقع على الطالب.</p> <p>7 في نظام امتحان اليوس 2023 فإن أربعة أجوبة خاطئة تزيل علامة جواب صحيح.</p> <p>8 القواعد الأخرى التي يجب اتباعها في الصفحة الأخيرة من الكتيب.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p>1- این کتابچه حاوی پرسش‌هایی است که ویژه‌ی گزینش داوطلبین و مراجعین بینالمللی که مایل ادامهی تحصیل در دانشگاه‌های مختلف ترکیه می باشند.</p> <p>تعداد پرسش‌های این آزمون عبارتند از:</p> <p>ریاضی: 40 و مهارت‌های اصلی آموزشی: 40</p> <p>2- نوع این کتابچه A می باشد. نوع کتابچه را در جای مرتبط در برگهی پاسخ‌ها مشخص کرده از مسئول سالن تأیید آن را درخواست کنید. در حال اشتباه امکان تصحیح برگهی شما امکان پذیر نمی باشد.</p> <p>3- در این آزمون مراجعین فقط 120 دقیقه وقت دارند.</p> <p>4- برای هر یکی از پرسش‌ها فقط یک گزینه‌ی درست موجود است. در صورتی که بیشتر از یک گزینه علامت زده شده باشد آن پاسخ غلط محسوب می شود.</p> <p>5- پاسخ‌های سوالات را در جاهای مشخص شده در برگه پاسخ که همراه با کتابچه‌ی سوالات به شما داده شده است با مداد علامت بزنید</p> <p>برگهی پاسخ‌ها را چین دار نکنید و چروک نزنید و بر روی برگه بپیوده علامت گذاری نکنید</p> <p>6- در صورتی که پاسخ‌ها در برگه بصورت صحیح علامت گذاری نشود خواننده‌ی نوری نمی تواند آن را بخواند. خود مراجعین مسئول اشتباه‌های ناشی از علامت‌گذاری می باشند.</p> <p>7- چهار پاسخ غلط یک پاسخ صحیح را کم می کند. پاسخ‌های درست و نادرست مراجعین در آزمون سال 2023 شمرده می شود و یک ربع پاسخ‌های نادرست از کل پاسخ‌های درست کم می شود.</p> <p>8- قوانین دیگری که در این آزمون به عمل می آیند در آخرین برگ این کتابچه آمده‌اند</p>                                                                                                                                                       |



1.

$$\frac{a}{b} = \frac{3}{4} \Rightarrow \frac{a+2b}{b-a} = ?$$

- A) -11    B) -10    C) 4    D) 10    ☒ 11

2.

$$b > 0, \quad y = \sqrt{b} \Rightarrow \sqrt[3]{b^2} = ?$$

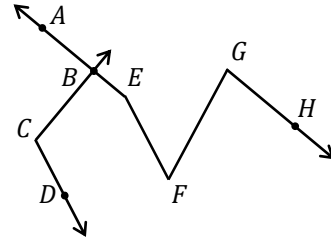
- A)  $y^3$     B)  $y^2$     C)  $\sqrt[3]{y}$     D)  $y^6\sqrt{y}$     ☒  $y^3\sqrt{y}$

3.

$$x = \frac{3}{4} - \frac{3}{5} + \frac{3}{7} \Rightarrow -\frac{4}{7} - \frac{1}{4} - \frac{3}{5} = ?$$

- A)  $x+2$     B)  $-x+2$     C)  $2x$   
D)  $2x+1$     ☒  $x-2$

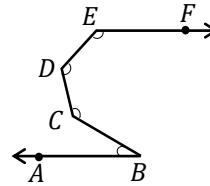
4.



$$\left. \begin{array}{l} [AE] // [GH], [CD] // [EF] \\ [AB] \perp [CB], B \in [AE] \\ m(\angle BCD) = 100^\circ, m(\angle EFG) = 65^\circ \end{array} \right\} \Rightarrow m(\angle FGH) = ?$$

- A)  $60^\circ$     B)  $65^\circ$     C)  $70^\circ$     ☒  $75^\circ$     E)  $80^\circ$

5.



$$\left. \begin{array}{l} [AB] // [EF], m(\angle ABC) = b \\ m(\angle BCD) = c, m(\angle CDE) = d \\ m(\angle DEF) = e \end{array} \right\} \Rightarrow e + d + c - b = ?$$

- ☒  $360^\circ$     B)  $300^\circ$     C)  $270^\circ$     D)  $180^\circ$     E)  $120^\circ$

6.

$$2\left(\frac{1}{2} - \frac{1}{4}\right) - \left(1 - \frac{1}{4}\right) - \frac{1}{4} = ?$$

- A)  $-\frac{2}{3}$     ☒  $-\frac{1}{2}$     C)  $\frac{1}{4}$     D)  $\frac{1}{2}$     E)  $\frac{3}{4}$



7.  $(0,35 + 0,13 : 0,2) : (0,94 - 0,0484 : 0,11) = ?$

- ☒ A) 2   B) 0,5   C) 0,2   D) 0,1   E) 0,05

8.  $\frac{(-2 + 2) : 2 - 2 + 2(1 - 2)}{-2 + 2 - 2(1 - 2)} = ?$

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

9.  $\left. \begin{array}{l} a, b, c \in \mathbb{R} \\ 3a - c = 4b \\ 7a + 3b = -10c \end{array} \right\} \Rightarrow a = ?$

- A)  $-2b$    B)  $3c$    C)  $2c$  ☒ D)  $b$    E)  $2b$

10.  $\left. \begin{array}{l} x, y \in \mathbb{R} \\ x + y = 0 \\ x^2 y < 0 \end{array} \right\} \Rightarrow |2y - x| + |x - y| - |2y| = ?$

- A)  $x$    B)  $-2y$  ☒ C)  $-3y$   
D)  $y$    E)  $-3x$

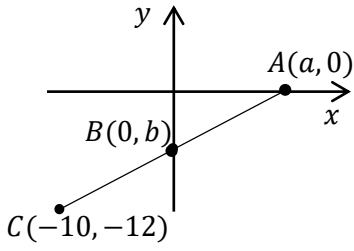
11.  $\frac{1}{x-2} : (x^2 + x - 6)^{-1} = ?$

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

12.  $\left. \begin{array}{l} f: \mathbb{R} \rightarrow \mathbb{R} \\ f(x-1) - f(x+2) = 2x \\ f(0) = -4 \end{array} \right\} \Rightarrow f(9) = ?$

- ☒ A) -28   B) -18   C) 10   D) 18   E) 28

13.



$$\left. \begin{array}{l} B \in [AC] \\ |AC| = 2|AB| \end{array} \right\} \Rightarrow a + b = ?$$

- A) -10    B) -2    C) 2    ☒ 4    E) 16

14.

$$P(x) = x^3 + 3x^2 + 3x - 4 \quad \left. \begin{array}{l} x \in \mathbb{R}, \\ P(x) = x^3 + 3x^2 + 3x - 4 \end{array} \right\} \Rightarrow P(\sqrt[3]{3} - 1) = ?$$

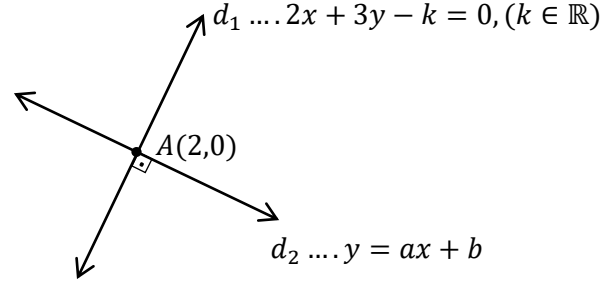
- ☒ -2    B)  $-2\sqrt{3}$     C) 2    D)  $2\sqrt{3}$     E)  $4\sqrt{3}$

15.

$$A \subset B \subset C \Rightarrow A \cup [(B \setminus A) \cap (C \setminus A)] = ?$$

- A)  $\emptyset$     B) A    ☒ B    D) C    E)  $C \setminus B$

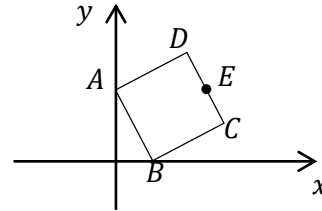
16.



$$\left. \begin{array}{l} A \in d_1 \cap d_2 \\ d_1 \perp d_2 \end{array} \right\} \Rightarrow 2a + b + k = ?$$

- ☒ 4    B) 3    C)  $\frac{-3}{2}$     D) -2    E) -3

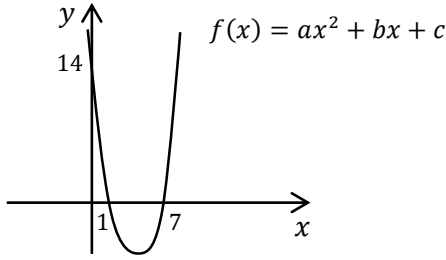
17.



$$\left. \begin{array}{l} [AB] \parallel [DC], [AD] \parallel [BC] \\ [AB] \perp [BC], |AB| = |BC| \\ E \in [DC], |DC| = 2|EC| \\ A(0, 4), B(3, 0), E(a, b) \end{array} \right\} \Rightarrow b - a = ?$$

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

18.



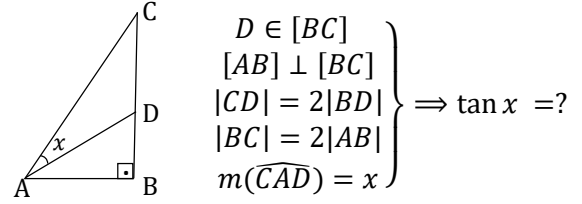
$$f(2) = ?$$

- ☒ -10    B)  $-\frac{7}{2}$     C)  $-\frac{5}{2}$     D)  $-\frac{3}{2}$     E)  $-\frac{1}{2}$

$$19. \quad \left. \begin{array}{l} x, y \in (0, \frac{\pi}{2}) \\ x + y = \frac{\pi}{4} \end{array} \right\} \Rightarrow \tan(4x + 3y) = ?$$

- A)  $-\tan x$     B)  $\tan x$     ☒  $-\tan y$     D)  $\tan y$     E)  $\cot x$

20.



- A)  $\frac{2}{3}$     ☒  $\frac{4}{7}$     C)  $\frac{1}{3}$     D)  $\frac{1}{4}$     E)  $\frac{\sqrt{3}}{7}$

$$21. \quad x \in (0, \frac{\pi}{2}) \Rightarrow$$

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

- A) 1    B)  $\cos x$     C)  $2 \sin x$     ☒  $\sin 2x$     E)  $\cot 2x$

22.

$$\sum_{k=2}^5 3^k \binom{5}{k} = ?$$

- A)  $3^5 - 3^2$     B)  $3^6$     C)  $3^6 - 3$     ☒  $4^5 - 4^2$     E)  $4^6 - 4$

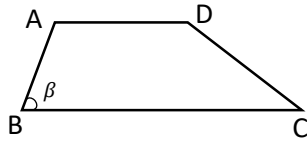


23. 
$$\left. \begin{array}{l} a = 0 \\ b = -2 \\ c = 3 \end{array} \right\} \Rightarrow b < a < c$$

$$\left. \begin{array}{l} x = \sin 50^\circ \\ y = \cos 50^\circ \\ z = \tan 50^\circ \end{array} \right\} \Rightarrow ?$$

- A)  $x < y < z$     B)  $x < z < y$     ☒  $y < x < z$   
 D)  $y < z < x$     E)  $z < y < x$

24.



$$\left. \begin{array}{l} [AD] \parallel [BC], m(\angle ABD) = \beta \\ |AB| = 8 \text{ cm}, |BC| = 15 \text{ cm} \\ |DC| = 9 \text{ cm}, |AD| = 10 \text{ cm} \end{array} \right\} \Rightarrow \cos \beta = ?$$

- A)  $\frac{2}{3}$     B)  $\frac{2}{5}$     C)  $\frac{2}{7}$     D)  $\frac{1}{7}$     ☒  $\frac{1}{10}$

25. 
$$\left. \begin{array}{l} i = \sqrt{-1} \\ z_1 = \sqrt{3} + i\sqrt{2} \\ z_2 = \sqrt{2} + i\sqrt{3} \end{array} \right\} \Rightarrow \frac{z_1}{z_2} = ?$$

- A)  $\sqrt{6}$     B)  $i\sqrt{6}$     ☒  $i$     D)  $\sqrt{6} - i\sqrt{6}$     E)  $\sqrt{6} + i\sqrt{6}$

26.  $i = \sqrt{-1}, z = \sqrt{2} - i\sqrt{2} \Rightarrow |z^3| = ?$

- A)  $2\sqrt{2}$     B)  $3\sqrt{2}$     C)  $4\sqrt{2}$     D)  $5\sqrt{2}$     ☒ 8

27.

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

$$x \wedge y = \begin{cases} x, & x < y \\ x + y, & x \geq y \end{cases}$$

$$\Rightarrow (\log_5 90 \wedge \log_3 90) \wedge \log_2 90 = ?$$

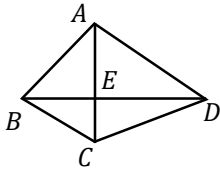
- ☒  $\log_5 90$     B)  $\log_3 90$     C)  $\log_2 90$   
 D)  $\log_{15} 90$     E)  $\log_6 90$

28. 
$$\frac{1}{\log_{10} x} + \frac{1}{\log_3 x} - \frac{1}{\log_6 x} = \frac{1}{2} \Rightarrow x = ?$$

- A) 4    B) 10    C) 20    ☒ 25    E) 100



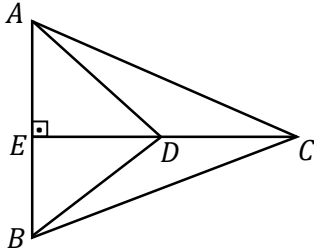
29.



$$\left. \begin{array}{l} [BD] \perp [AC] \\ 5|AC| = 3|BD| \\ A(ABCD) = 120 \text{ cm}^2 \end{array} \right\} \Rightarrow |AC| = ? \text{ cm}$$

- A)  $\frac{23}{2}$     B) 12    C)  $\frac{25}{2}$     D) 13    E)  $\frac{27}{2}$

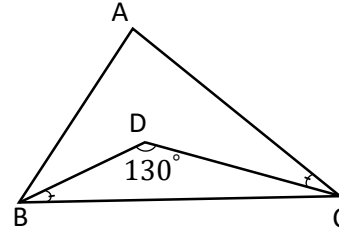
30.



$$\left. \begin{array}{l} [AB] \perp [EC], D \in [EC] \\ E \in [AB], |AC| = 5\sqrt{5} \text{ cm} \\ |BC| = 11 \text{ cm}, |AD| = 6 \text{ cm} \end{array} \right\} \Rightarrow |BD| = ? \text{ cm}$$

- A)  $\frac{7\sqrt{2}}{2}$     B)  $3\sqrt{2}$     C)  $4\sqrt{2}$     D)  $5\sqrt{2}$     E)  $\frac{11\sqrt{2}}{2}$

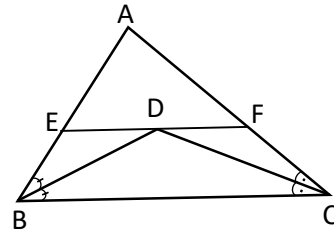
31.



$$\left. \begin{array}{l} m(\angle DBC) = m(\angle DCA) \\ m(\angle BDC) = 130^\circ \end{array} \right\} \Rightarrow m(\angle ACB) = ?$$

- A)  $45^\circ$     B)  $50^\circ$     C)  $55^\circ$     D)  $60^\circ$     E)  $65^\circ$

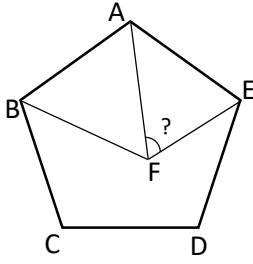
32.



$$\left. \begin{array}{l} [EF] \parallel [BC], D \in [EF] \\ m(\angle EBD) = m(\angle DBC) \\ m(\angle DCB) = m(\angle DCF) \end{array} \right\} \Rightarrow |AE| + |EF| + |FA| = ? \text{ cm}$$

- A) 20    B)  $\frac{45}{2}$     C) 25    D) 24    E) 26

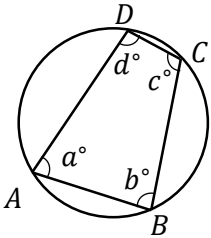
33.



$$\left. \begin{array}{l} |AB| = |BC| = |CD| = |DE| \\ |EA| = |BF| = |FA| = |AB| \\ m(\angle ABC) = m(\angle BCD) = m(\angle CDE) \\ m(\angle DEA) = m(\angle EAB) = m(\angle BCD) \\ \Rightarrow m(\angle AFE) = ? \end{array} \right\}$$

- A)  $50^\circ$  B)  $54^\circ$  C)  $62^\circ$  ☒  $66^\circ$  E)  $70^\circ$

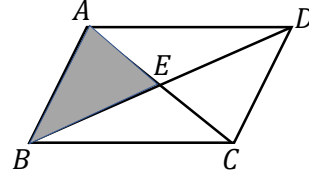
34.



$$\left. \begin{array}{l} m(\angle DAB) = a^\circ, m(\angle ABC) = b^\circ \\ m(\angle BCD) = c^\circ, m(\angle CDA) = d^\circ \\ 4b = d + 160, 5d = 4c + 40 \end{array} \right\} \Rightarrow a = ?$$

- A) 20 B) 30 C) 40 ☒ 50 E) 60

35.



$$\left. \begin{array}{l} [AB] // [CD], [AD] // [BC] \\ m(\angle EDA) = 20^\circ, m(\angle ECB) = 40^\circ \\ |AC| = 8cm, |BD| = 10cm \end{array} \right\} \Rightarrow A(\triangle AEB) = ? \text{ cm}^2$$

- A)  $20\sqrt{2}$  B)  $5\sqrt{6}$  ☒  $5\sqrt{3}$  D)  $5\sqrt{2}$  E)  $3\sqrt{2}$

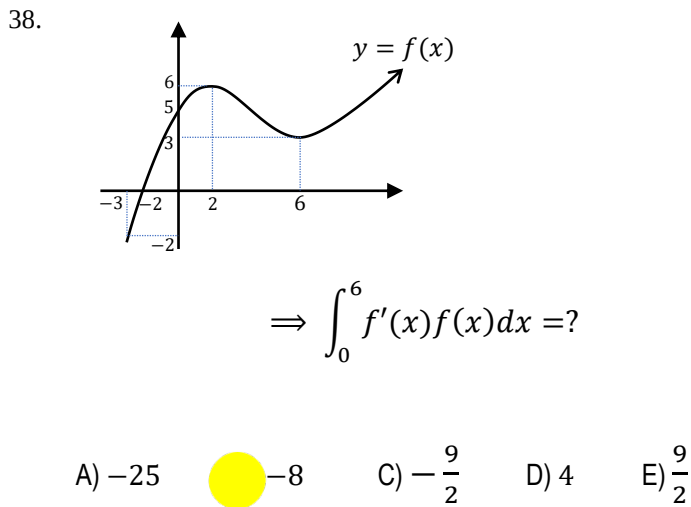
$$36. \quad A = \begin{bmatrix} 0 & -1 \\ 1 & 4 \end{bmatrix} \Rightarrow A - A^{-1} = ?$$

- ☒  $\begin{bmatrix} -4 & -2 \\ 2 & 4 \end{bmatrix}$  B)  $\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$  C)  $\begin{bmatrix} 0 & -1 \\ -1 & 4 \end{bmatrix}$   
D)  $\begin{bmatrix} 4 & 2 \\ -2 & -4 \end{bmatrix}$  E)  $\begin{bmatrix} 0 & 0 \\ 0 & 4 \end{bmatrix}$

37. 
$$\left. \begin{array}{l} f : \mathbb{R} \rightarrow \mathbb{R} \\ f(x) = x^4 - 2x + 1 \end{array} \right\}$$

$$\Rightarrow \lim_{h \rightarrow 0} \frac{f(2-3h) - f(2)}{-2h} = ?$$

A) -30    B) -15    C) 15    D) 30    ☒ 45



39.

$$f : \mathbb{R} \rightarrow \mathbb{R},$$

$$f(x) = \begin{cases} |x^2 - 6x + 5|, & x \leq 3 \\ x - 3, & x > 3 \end{cases}$$

$$\Rightarrow \lim_{x \rightarrow 2} f(x) + \lim_{x \rightarrow 4} f(x) = ?$$

A) -3    B) -2    C) 0    D) 2    ☒ 4

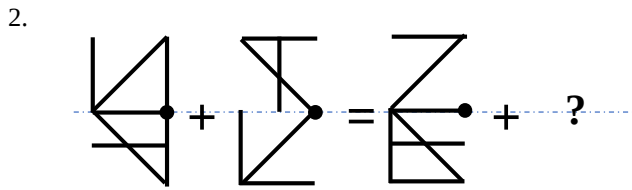
40.

$$\lim_{x \rightarrow -1} \frac{|-2x^2 + 5x + 3| - 4}{|x + 3| - 2} = ?$$

A) -10    ☒ -9    C) 0    D) 9    E) 10

1.  $(2x + 3y) \oplus (2y + 3x) = \frac{1}{x} - \frac{1}{y}$   
 $\Rightarrow (22) \oplus (18) = ?$

- A)  $-\frac{1}{6}$     B)  $-\frac{1}{3}$     C)  $\frac{1}{6}$      **$\frac{1}{3}$**     E)  $\frac{1}{2}$



- A)        C)    D)    E)

3.  $\left. \begin{array}{l} G S B C \\ H D F G \\ D B H F \\ S C G D \end{array} \right\} \left\{ \begin{array}{l} 5462 \\ 2738 \\ 6574 \\ 3286 \end{array} \right.$

B H G S = ?

- A) 4762    B) 4765    C) 7362    **7365**    E) 8765

4.  $\left. \begin{array}{l} 7231 \\ 2584 \\ 5718 \\ 4187 \end{array} \right\} \left\{ \begin{array}{l} \bullet \star \blacktriangle \square \\ \blacksquare \bullet \square \triangle \\ \triangle \blacktriangle \square \star \\ \star \blacksquare \odot \blacktriangle \end{array} \right.$

$\blacktriangle \odot \bullet \blacksquare = ?$

- A) 8472    B) 8352    C) 4372    **1352**    E) 1372

5.

|           |       |
|-----------|-------|
| △ ◎ ◇ □ ⌘ | 96732 |
| ● ★ ■ ◎ ▲ | 64875 |
| ■ ⌘ ● ★ ◇ | 78463 |
| ▲ □ △ ⌘ ■ | 23154 |
| ⌘ ● ★ ▲ △ | 31597 |
| □ ◇ ◎ △ ★ | 15289 |

★ △ ◎ ◇ ▲ = ?

A) 54987 B) 57849 C) 58479 D) 59478 E) 59487

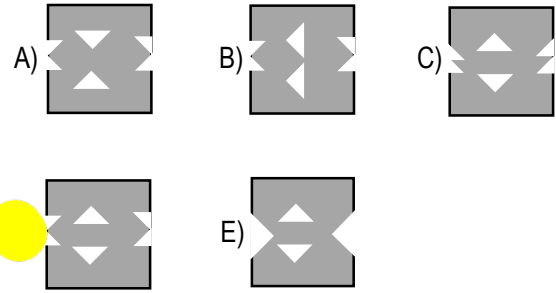
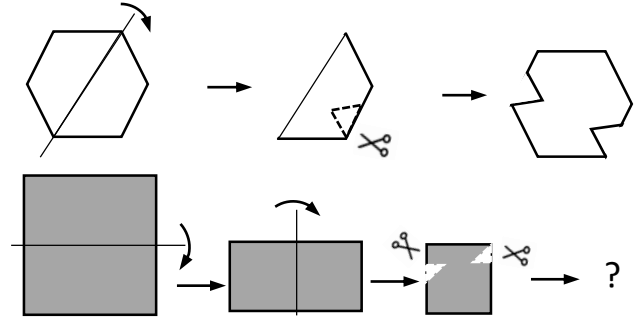
6.

| I         | II        |
|-----------|-----------|
| ★ ◎ ◇ □ ⌘ | ⌘ ■ ▲ ▲ ◎ |
| ● ■ ◎ ▲ ★ | ■ ● ▲ ⌘ △ |
| △ ⌘ ● ★ ◇ | △ ◇ □ ● ▲ |
| ▲ □ △ ⌘ ■ | ▲ □ ◎ ★ ■ |
| ⌘ ▲ ★ △ ● | ● ★ ⌘ ■ ◇ |

□ ⌘ ● ▲ ■ = ?

A) ★ ■ ▲ ● ◇ B) ▲ ■ ● △ ◇ C) ⌘ ■ ★ ▲ △  
D) △ ★ ■ ◇ ● E) ⌘ ▲ ● ★ ◇

7.



8.

| I           | II          |
|-------------|-------------|
| B H J D C F | C J B H G F |
| H D F G K B | D G F H J K |
| G C K D H J | G H K C B D |
| K G B C J D | B C D J F H |
| I           | II          |
| D J H B K G | ?           |

A) HFD BJG B) FHG JDC C) KFG JDC  
D) HFG DBC E) FHG DKB



9.

PRTY  
PSQT  
SYRQ  
SPTR  
QPRS

SPTR = ?

- A) 2358 B) 5273 C) 3287 D) 2784 E) 3475

10.

|   |   |   |   |    |
|---|---|---|---|----|
| 2 | 1 | 3 | 5 | 7  |
| 3 | 4 | 5 | 6 | -2 |
| 4 | 6 | 4 | 7 | 4  |
| 4 | 2 | 5 | 3 | 2  |
| 5 | 3 | 7 | 4 | -1 |
| 5 | 3 | 3 | 1 | -4 |
| 6 | ? | 1 | 5 | 24 |

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

11.

$$\blacktriangle + \blacktriangle + \blacktriangle + \square - \bullet = 5$$

$$\bullet + \bullet + \bullet + \square + \blacktriangle = 25$$

$$\blacktriangle - \square + \bullet = 3$$

$$\blacktriangle + \square + \bullet = ?$$

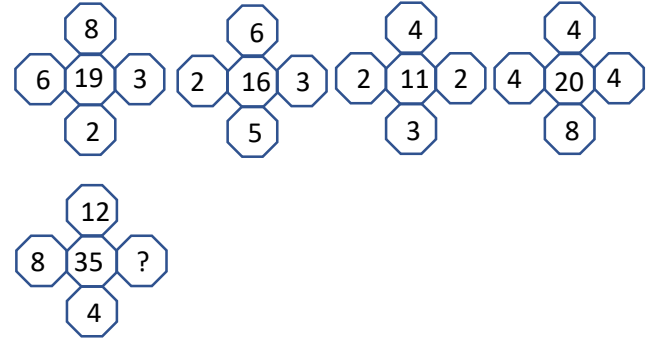
- A) 4 B) 6 C) 9 D) 11 E) 13

12.

|    |     |    |    |    |    |
|----|-----|----|----|----|----|
| 9  | 12  | 10 | 8  | 15 | 50 |
| 57 | 124 | 84 | 34 | ?  |    |

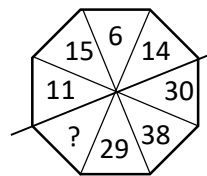
- A) -15 B) 65 C) 85 D) 115 E) 125

13.



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

14.



- A) 24 B) 27 C) 30 D) 33 E) 36



15. I. 125 → 10  
II. 152 → 13  
III. 243 → 13  
IV. 271 → 17  
V. 412 → 8  
VI. 434 → ?
- A) 12 B) 14 C) 15 D) 16 E) 17

16. I. 1361 → 9  
II. 1353 → 14  
III. 1642 → 16  
IV. 2481 → 20  
V. 2283 → 22  
VI. 2861 → ?
- A) 32 B) 28 C) 22 D) 20 E) 17

17. 33 → 24  
44 → 28  
47 → 19  
55 → 30  
67 → 25  
76 → ?
- A) 28 B) 34 C) 38 D) 41 E) 48

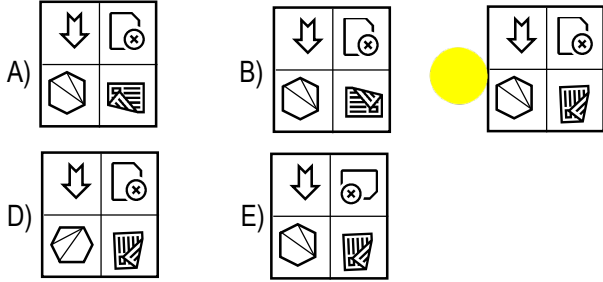
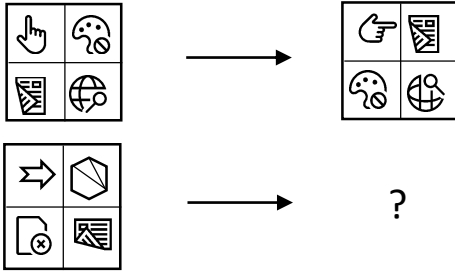
18. 14057 → -1  
16151 → -8  
18724 → 2  
23773 → 2  
27156 → -3  
29250 → -10  
78255 → ?

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

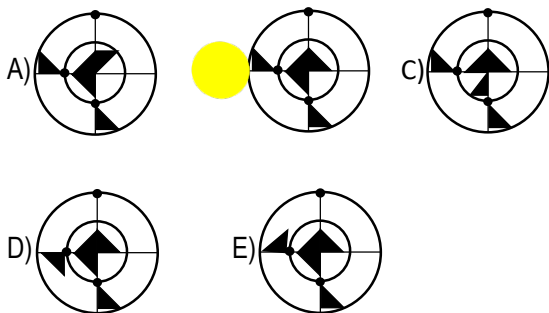
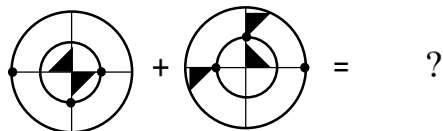
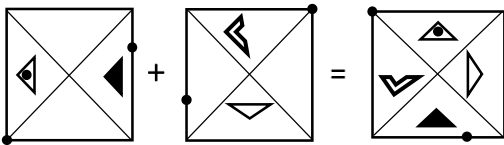
19.  $(xy - 2) \Delta (2y + 1) = x + 2y \Rightarrow (-7) \Delta (3) = ?$
- A) 2 B) 1 C) -1 D) -2 E) -3

20. 3 ★ 4 = 5  
4 ★ 11 = 5  
5 ★ 12 = 13  
6 ★ 21 = 15  
7 ★ 37 = 12  
8 ★ 44 = ?
- A) 35 B) 30 C) 25 D) 20 E) 15

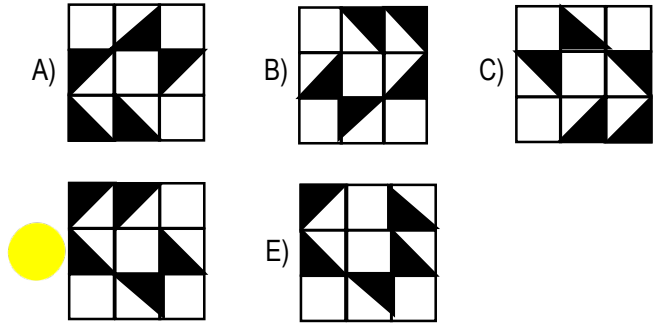
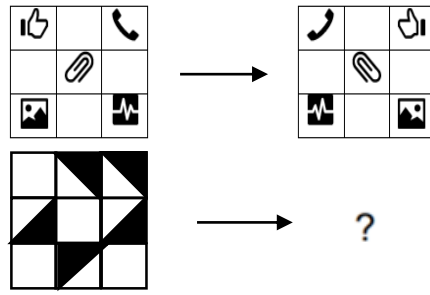
21.



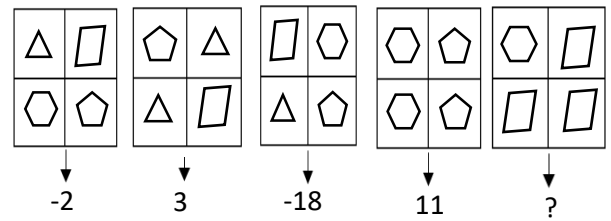
22.



23.



24.



A) 12 B) 8 C) 4 D) -4 E) -8



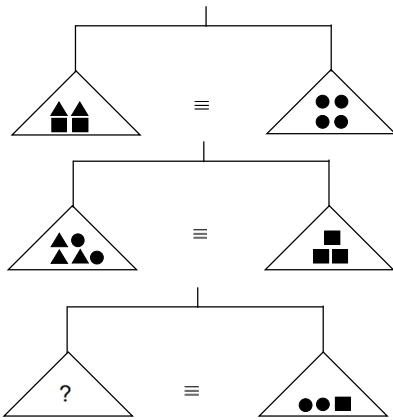
25.

|    |    |    |    |   |    |   |   |    |    |    |    |
|----|----|----|----|---|----|---|---|----|----|----|----|
| 12 | 8  | 35 | 15 | 2 | 16 | 5 | 9 | 5  | 7  | 13 | 10 |
|    |    |    | 7  |   |    |   | 3 |    |    |    | 3  |
|    |    |    | 0  |   |    |   | 2 |    |    |    | 5  |
| 8  | 28 | 3  | 5  | 1 | 2  | 4 | 2 | 10 | 22 | 44 | 5  |
|    |    |    | 4  |   |    |   | 0 |    |    |    | X  |
|    |    |    | 4  |   |    |   | 9 |    |    |    | Y  |

 $X+Y=?$ 

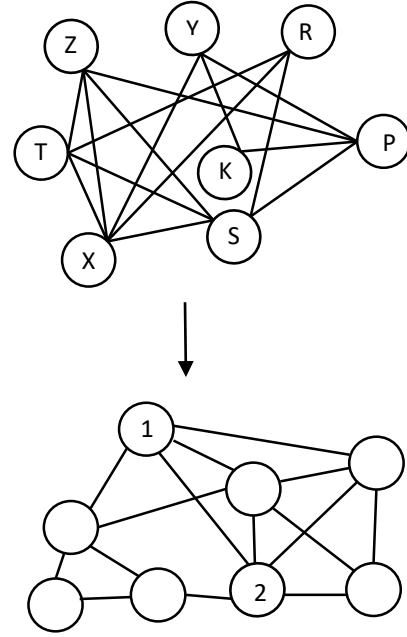
- A) 15    B) 13    C) 11    **9**    E) 7

26.



- A) ▲▲▲▲    B) ▲▲▲●  
C) ▲▲▲▲■    **▲▲▲▲▲**  
E) ▲▲▲■

27.


 $(1,2)=?$ 

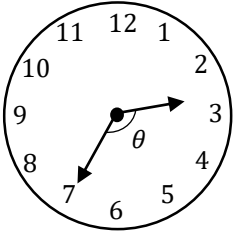
- A) (T, S)    B) (T, X)    C) (P, X)    **(Z, X)**    E) (P, S)

28.

3, 2, 7, 8, 15, 20, 27, 38, 43, 62, 63, 92, 87, 128, ?

- A) 108    **115**    C) 123    D) 133    E) 145

29.

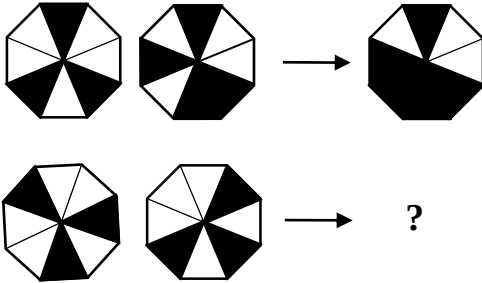


02:35

$\theta = ?$

- A)  $130^\circ$     ☒  $132,5^\circ$     C)  $135^\circ$   
D)  $136,5^\circ$     E)  $137,5^\circ$

30.



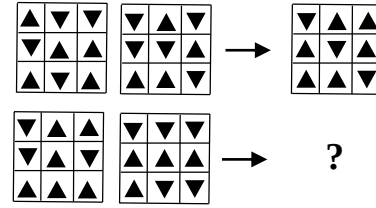
- A)    B)    C)   
☒    E)

31.

|    |   |   |   |     |   |   |   |    |   |   |   |
|----|---|---|---|-----|---|---|---|----|---|---|---|
| 1  | 2 | 3 | 2 | 1   | 2 | 4 | 3 | 6  | 3 | 3 | 1 |
| 2  | 0 | 2 | 7 | 0   | 2 | 2 | 3 | 5  | 5 | 7 | 2 |
| ↓  |   | ↓ |   | ↓   |   | ↓ |   | ↓  |   | ↓ |   |
| -8 |   | 5 |   | -12 |   | 9 |   | 30 |   | ? |   |

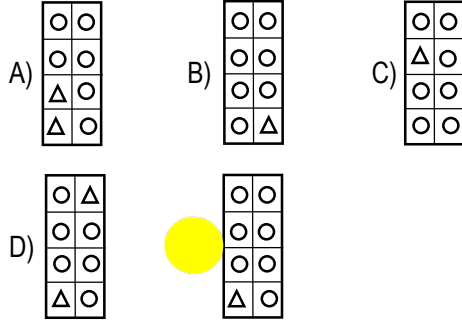
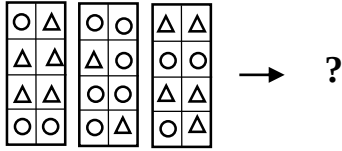
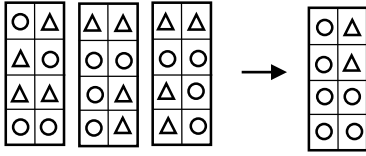
- A) 12    B) 18    ☒ 25    D) 32    E) 35

32.

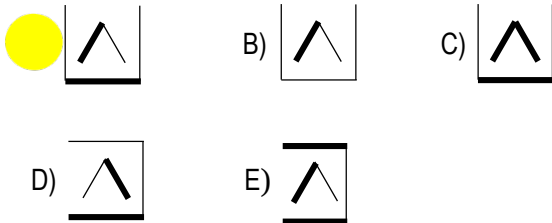
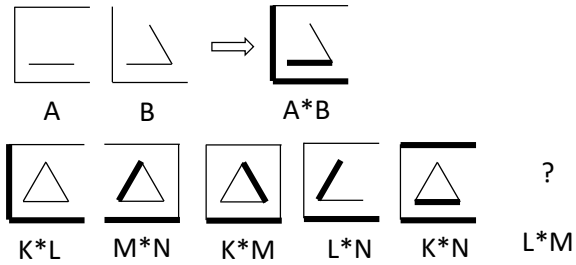


- ☒    B)    C)   
D)    E)

33.



34.



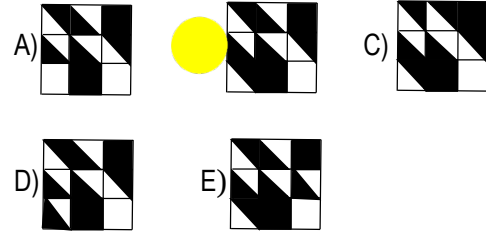
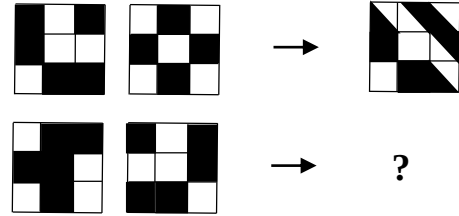
35.

|   |   |    |    |    |    |    |   |
|---|---|----|----|----|----|----|---|
| 4 | 8 | 10 | 20 | 22 | 44 | 46 | X |
| 2 | 6 | 3  | 9  | 6  | 18 | 15 | Y |

X-Y=?

A) 37 B) 42 C) 47 D) 52 E) 57

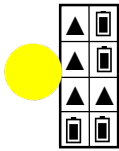
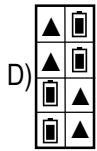
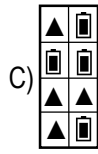
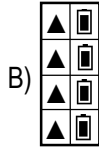
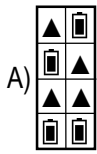
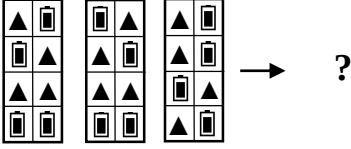
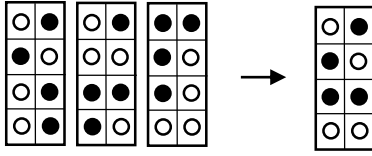
36.



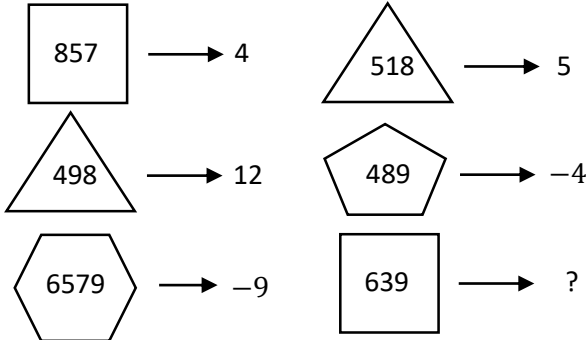
37. 2, 0, 1, 4, -2, 3, 6, -4, 5, 8, -6, 7, 10, -8, 9, 12, -10, ?

A) 10 B) 11 C) 12 D) 13 E) 14

38.

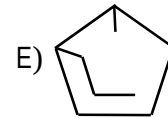
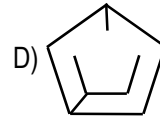
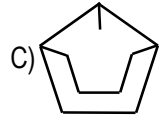
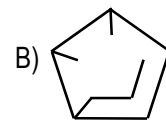
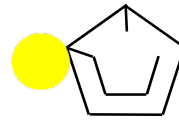
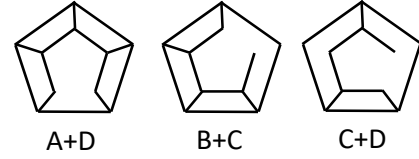
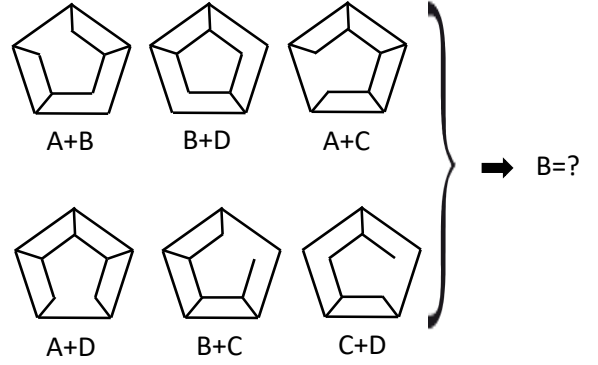
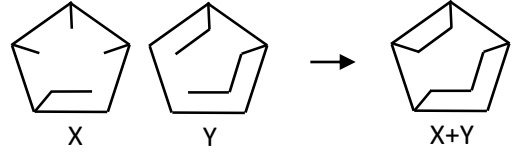


39.



A) -5   B) -3   C) -2   2   E) 3

40.



SINAV BİTTİ. LÜTFEN CEVAPLARINIZI  
KONTROL EDİNİZ.

END OF THE EXAM. PLEASE CHECK  
YOUR ANSWERS.



1. Cep telefonu, çağrı cihazı, telsiz vb. haberleşme araçları ile cep bilgisayar, her türlü bilgisayar özelliği bulunan cihazlarla; silah ve benzeri teçhizatla, müsvedde kâğıdı, defter, kitap, sözlük, sözlük işlevi olan elektronik aygıt, hesap cetveli, pergel, açölçer, cetvel, hesap makinesi vb. araçlarla sınava girmek yasaktır. Bu araçlarla sınava girmiş öğrenciler mutlaka Salon Sınav Tutanağına yazılacak, bu öğrencilerin sınavları geçersiz sayılacaktır.
2. Sınavda adaylara 120 dakika süre verilmiştir. Sınavın ilk 15 dakikasından sonra hiçbir şekilde adaylar sınava alınmayacaktır. Sınavın başlamasını izleyen ilk 30 ve son 5 dakikası içinde adayların sınavdan çıkması kesinlikle yasaktır. Sınav evrakını teslim ederek salonu terk eden aday, her ne sebeple olursa olsun, tekrar sınava devam ettirilmeyecektir. Cevaplamayı süre bitmeden tamamlarsanız, cevap kâğıdınızı ve soru kitapçığınızı salon görevlilerine teslim ederek yukarıda belirtilen süreler içinde salonu terk edebilirsiniz. Sınav süresinin bittiği ilan edilip cevap kâğıtları ve soru kitapçıkları salon görevlileri tarafından toplanıncaya kadar yerlerinizde kalınız.
3. Sınav süresince görevlilerle konuşmak ve soru sormak yasaktır. Aynı şekilde görevlilerin de adaylarla yakından ve alçak sesle konuşmaları, ayrıca adayların birbirinden kalem, silgi vb. şeyleri istemeleri kesinlikle yasaktır.
4. Sınav sırasında kopya çeken, çekmeye kalkışan, kopya veren, kopya çekilmesine yardım edenlerin kimlikleri, Salon Sınav Tutanağına yazılacak ve bu adayların sınavları geçersiz sayılacaktır. Görevliler kopya çekmeye veya vermeye kalkışanları uyarmak zorunda değildir, sorumluluk size aittir. Adayların test sorularına verdikleri cevapların dağılımları bilgi işlem yöntemleriyle incelenecek; bu incelemelerden elde edilen bulgular bireysel veya toplu olarak kopya girişiminde bulunulduğunu gösterirse, kopya eylemine katılan adayların sınavı iptal edilecektir. Cevap kâğıdınızı başkaları tarafından görülmeyecek şekilde tutmanız gerekmektedir. Bu durum sizin için son derece önemlidir. Sınav görevlileri, sınavın kurallara uygun biçimde yapılmadığını veya toplu kopya girişiminde bulunulduğunu raporunda bildirdiği takdirde, İnönü Üniversitesi takdir hakkını kullanarak ilgili sınıflardaki öğrencilerin tamamının sınavını iptal etme hakkına sahiptir.
5. Cevap kâğıdında ilgili alanları doldurmanız gerekmektedir. Cevap kâğıdına yazılacak her türlü yazıda ve yapılacak bütün işaretlemelerde kurşun kalem kullanılacaktır. Cevapların cevap kâğıdına işaretlenmiş olması gerekir. Soru kitapçığına işaretlenen cevaplar geçerli değildir.
6. Cevaplamaya geçmeden önce size verilecek soru kitapçığı üzerinde ayrılan yere adınızı, soyadınızı ve Aday Numaranızı yazıp imzalayınız. Sınav sonunda soru kitapçıkları ile cevap kâğıtları toplanacak ve tek tek incelenecektir. Soru kitapçığının sayfalarının eksik bulunması durumunda sınavınız geçersiz sayılacaktır.
7. Soru kitapçıklarının sayfalarındaki boş yerleri müsvedde için kullanabilirsiniz.
8. Sınav süresince, görevliler dahil, salonda kimse sigara, pipo, puro vb. şeyleri içmeyecektir.
9. Sınav salonundan ayrılmadan önce, soru kitapçığınızı ve cevap kâğıdınızı salon görevlilerine teslim etmeyi unutmayınız.
1. Following materials are prohibited in exam room: Any communication equipment e.g. mobile phones, pagers, walkie-talkies, PDA's, weapons and similar equipment, scratch papers, notebooks, books, dictionaries, any electronic device with dictionary function, calculators, calculation charts, compasses, goniometers, rulers and etc. If any candidate enters the exam room with the prohibited materials, his/her name will be recorded and their examinations will be invalidated.
2. The exam will take 120 minutes. Candidates cannot enter the exam hall if they are late for more than 15 minutes. Candidates are not allowed to leave the exam room during the first 30 minutes and last 5 minutes. Candidates who have submitted the exam documents and left exam room will not be allowed to enter the examination room again. If you have completed the exam before the exam ends, you can leave the room after submitting your question booklet and answer sheet within allowed time periods. When the end of the examination is announced, you must remain seated and do not leave the examination room until all papers are collected by the invigilators.
3. Speaking with the invigilators during the examination is prohibited. Similarly, it is prohibited for the staff to talk to candidates closely and silently. Candidates are not allowed to exchange pencils, erasers, papers etc. during the exam.
4. The exam of any candidate who cheats, attempts to cheat or assists cheating will be invalidated. Invigilators do not have to warn the students about cheating. The candidate is responsible for his/her actions. Answers of the candidates will be examined electronically. If any suspicious case is detected regarding individual or collaborate cheating, the exams of all candidates who involve in this action will be invalidated. If invigilators report any case of misconduct against exam rules during the exam or collaborate cheating, relevant authorities of İnönü University may decide to invalidate all candidates' exams for that session.
5. You must fill all the required fields on the answer sheet. Only pencils with soft leads should be used for marking and writing on the answer sheet. Pens or ball point pens should not be used. All answers should be marked on the answer sheet. Answers marked on the question booklet are not valid.
6. Please write your name, surname and candidate number on the question booklet before starting to answer the questions. All question booklets and answer sheets will be collected and examined after the examination. In case of any missing pages, the candidate's exam will be invalidated.
7. You can use the blank spaces on the question booklet for calculation.
8. Smoking (cigarettes, pipes, cigars etc.) is not allowed during the examination for both candidates and the invigilators.
9. Do not forget to submit your question booklet and answer sheet before leaving the exam room.