CANER yayınları

YÖS
YABANCI ÖĞRENCİ SINAVI

MATEMATİK 2
SORU BANKASI/QUESTION BANK

ZİHİN HARİTASI

SARMAL TARAMA TESTLERİ

7 ADET MATEMATİK2 DENEME SINAVI

YÖS BENZERİ SORULAR

VİDEO ÇÖZÜMLERİ İZLE...

KARE KODU OKUT

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- Mind Maps
- Spiral Screening Tests
- 7 Mathematics 2 Trial Exams
- Questions Similar to YÖS

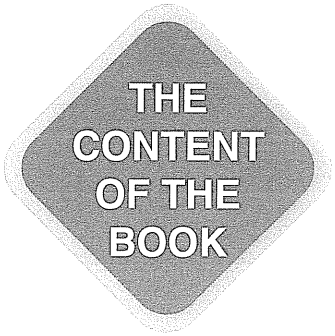
2893 SORU

CANER
eğitim kurumları

- Her test kendi içerisinde öğrenme sırası dikkate alınarak hazırlanmıştır.
- Konunun daha iyi anlaşılabilmesi için zihin haritası ile desteklenmiştir.
- Öğrencilerimizin soruları çözerken nerede takıldıklarını tespit edebilmeleri için konuya ait her tip soru çeşidine yer verilmiştir.
- Algı ve yorum gücünü ölçen sorular vardır.
- Sarmal tarama ile konuların ikili olarak değerlendirilmesi sağlanmıştır.
- Çıkmış YÖS benzeri sorular ile gerçek bir sınav provası yapılması sağlanmıştır.
- Sarmal denemeler ile önceki konuların unutulması engellenerek konuların bütün olarak değerlendirilmesi sağlanmıştır.

BU KİTAP BANA NE KAZANDIRIR?

- Her tip soru çeşidi görmenizi sağlayacaktır.
- Akıl ve mantık yürütmenizi kolaylaştıracaktır.
- Düşünme becerinizi geliştirecektir.
- Her seviyedeki öğrenciye hitap eden bu soru bankası eksiklerinizi görmede size kaynak olacaktır.
- Bazı soruların farklı formatlarının üst üste sorulmasıyla konuları daha iyi öğrenmenizi, kavramanızı ve pekiştirmenizi sağlayacaktır.
- Seviyenizi belirlerken size yol gösterecektir.



- Each test has been prepared taking into account the learning order.
- It is supported with a mind map to make the subject understood better.
- All kinds of questions related to the subject are included for our students to determine where they get stuck on while solving the questions.
- There are questions that measure the degree of perception and interpretation.
- The subjects are evaluated in pairs by helical scanning.
- A real exam rehearsal is provided with questions like previoulsy asked question of YÖS.
- It is ensured that the subjects are evaluated as a whole by preventing forgetting of the previous subjects with the spiral trials.

WHAT DOES THIS BOOK GIVE TO ME?

- It will provide you to see all kinds of questions.
- It will make your reasoning and logic easier.
- It will improve your thinking skills.
- This question book, which appeals to students of all levels, will be your source for notice your deficiencies.
- It will help you to learn, comprehend and reinforce the subjects better by asking often the different formats of some questions.
- It will guide you in determining your level.

45125-07012020-01

ISBN: 978-605-69689-2-1

Yayın Yönetmeni / *Publishing Director*

Furkan AKTAŞ

Yazarlar / *Writers*

Ömer Faruk CANER

Sadık DEMİRBAŞ

Emet DENİZCİ

Dizgi / *Typographic*

Caner Eğitim Kurumları Dizgi Birimi

Basım Yeri / *Printing Place*

DuMat Ofset Matbaacılık San. ve Tic. A.Ş.

Bahçekapı Mah. 2477 Cad. No: 6 Şaşmaz / ANKARA

Tel: 0 312 278 82 00 • Faks: 0 312 278 82 30

Caner Yayınları

caneryayinlari

caneryayinlari.com

yosdershanesi.com

bilgi@caneryayinlari.com

0 212 542 41 21

0 532 238 44 94

ÖN SÖZ

Değişen eğitim - öğretim sisteminde matematik programı

Bilimsel bilginin gelişimi, doğası, günlük hayattaki yansımaları, sosyal ve ekonomik yönden katkıları gibi birçok alanı birleştirerek öğrencilerin donanımlı, bilinçli ve matematik dersini severek öğrenmelerini amaçlamıştır.

Eğitim sistemimizin hedefleri arasında eleştirel, analitik, yenilikçi düşünen, sorgulayan yorum yapan yani üst düzey bilişsel becerilere sahip bireyler yetiştirilmesi bulunmaktadır. Bu nedenle kitabımız hazırlanırken öğrenciyi birçok yönden desteklemek ve öğrenmeyi kolaylaştırmak için gerekli yöntemler dikkate alınmıştır.

Ünite içeriği, konuların zorluğu ve kolaylığı üniversite sınavında soru gelme olasılığı test sayıları belirlemede ölçümüz olmuştur.

Soru içeriği, MEB Talim ve Terbiye Kurulu Başkanlığı'nın belirlediği kazanımlar esas alınarak oluşturulmuştur.

Kitabımızın sizlere yeterli verimi sağlaması dileğiyle...

Ömer Faruk CANER

Kitapla ilgili öneri, istek ve düşüncelerinizi aşağıdaki mail adresine iletebilirsiniz.

bilgi@caneryayinlari.com

PREFACE

Mathematics program in the changing education system

By combining many fields such as the development of scientific knowledge, nature, reflections in daily life, social and economic contributions, it aims to enable students to learn equipped, conscious by loving mathematics.

The objectives of our education system are to train individuals who think critically, analytically, innovatively think, question and interpret, that is, high level cognitive skills.

Therefore, while preparing our book, the necessary methods are taken into consideration in order to support the student in many ways and to facilitate learning.

The content of the unit, the difficulty and ease of the subjects, the likelihood of questions

coming from the university exam have been measured in determining the number of tests.

The content of the question is based on the achievements determined by the MEB The Head Council of Education and Morality.

Wishing our book will provide you with sufficient efficiency...

Ömer Faruk CANER

You can send your suggestions, requests and thoughts about the book to the following e-mail address.

bilgi@caneryayinlari.com

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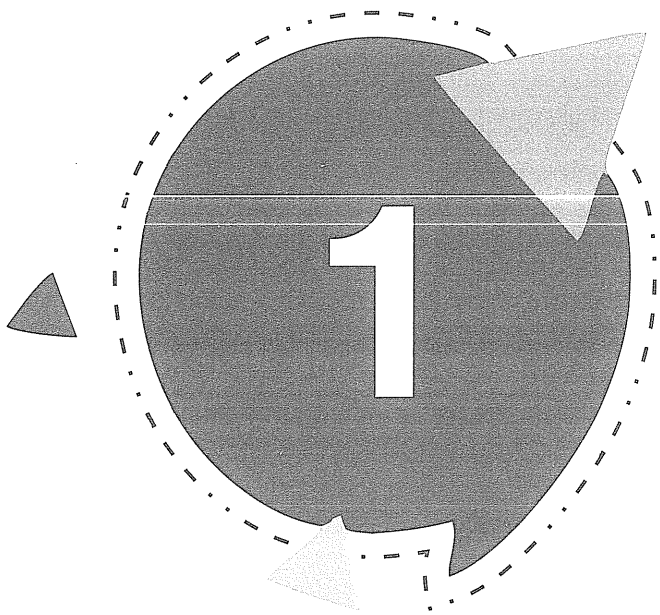

POLİNOMLAR
POLYNOMIALS

ZİHİN HARİTASI	13 TEST	208 SORU
Mind Map	*Tests*	*Questions*

POLİNOMLAR
POLYNOMIALS

CANER eğitim kurumları

$n \in N$

$a_n, a_{n-1}, a_{n-2}, ..., a_0 \in R$

$P(x) = a_n x^n + a_{n-1}x^{n-1} + a_{n-2}x^{n-2} + ... + a_1 x + a_0$

şeklindeki R'den R'ye tanımlı fonksiyonlara polinom denir. (*every defined function from R to R is called polynomial*)

- $a_n x^n, a_{n-1}x^{n-1}, ..., a_1 x, a_0$ polinomun terimleri (*terminology of polynomial*)
- $a_n, a_{n-1}, ..., a_1, a_0$ polinomun katsayıları (*coeficient of polynomial*)
- a_n polinomun başkatsayısı (*leading coeficient of polynomial*)
- a_0 polinomun sabit terimi (fixed term of *polynomial*)
- n polinomun derecesi (*degree of polynomial*)

  (d[p(x)] = der p(x) = n)

İki Polinomun Eşitliği

(The Equality of Two Polynomials)

İki polinomun eşit olabilmesi için aynı dereceli terimlerin katsayıları eşit olmalıdır.

(*For two polynomials to be equal to each other their factors of similar degree terms should be equal*)

- $P(x) = ax^2 + bx + c$

  $Q(x) = dx^2 + ex + f$

$P(x) = Q(x) \iff a = d$
$b = e$
$c = f$

d[P(x)] = m, d[Q(x)] = n

- $d[P(x) \cdot Q(x)] = m + n$
- $d\left[\frac{P(x)}{Q(x)}\right] = m - n$
- $d[P(x) \mp Q(x)] = \max\{m, n\} \quad (m \neq n)$
- $k \in R$
  $d[k \cdot P(x)] = m$
  $d[P(k \cdot x)] = m$
- $k \in R$
  $d[P(x^k)] = k \cdot m$
  $d[P^k(x)] = k \cdot m$

$$\begin{array}{r|l} P(x) & Q(x) \\ \hline - & B(x) \\ \hline K(x) & \end{array} \qquad d[Q(x)] \leq d[P(x)]$$

P(x) = Bölünen (*Divided*)
Q(x) = Bölen (*Divisor*)
B(x) = Bölüm (*Division*)
K(x) = Kalan (*Remainder*)

- $P(x) = Q(x) \cdot B(x) + K(x)$
- $d[K(x)] < d[Q(x)]$

$$\begin{array}{r|l} P(x) & x - a \\ \hline - & B(x) \\ \hline K & \end{array}$$

- $P(x) = (x - a) \cdot B(x) + K$
- $x - a = 0 \Rightarrow x = a$
  $P(a) = K$

1. $P(x) = 3x^2 - 2x + 1$

   $\Rightarrow$ **P(2) = ?**

   A) 7 B) 8 C) 9 D) 10 E) 11

2. $P(x) = x^3 - x^2 + x + 7$

   $\Rightarrow$ **P(4) = ?**

   A) 67 B) 62 C) 59 D) 48 E) 41

3. $P(x) = 2x^3 + 7x^2 + 2x - 11$

   $\Rightarrow$ **P(−3) = ?**

   A) −33 B) −26 C) −19 D) −14 E) −8

4. $P(x) = 3x^2 + 5x + a - 9$

   $P(1) = -7$

   $\Rightarrow$ **a = ?**

   A) −2 B) −4 C) −6 D) −8 E) −10

5. $Q(x) = 2x^2 - ax + 5$

   $Q(3) = 11$

   $\Rightarrow$ **Q(−3) = ?**

   A) 42 B) 35 C) 29 D) 24 E) 18

6. $P(x - 2) = 4x^2 + 1$

   $\Rightarrow$ **P(1) = ?**

   A) 5 B) 17 C) 37 D) 65 E) 82

7. $P(2x + 3) = 2x^3 - 5x^2 + 9x + 6$

   $\Rightarrow$ **P(5) = ?**

   A) 15 B) 14 C) 13 D) 12 E) 11

8. $Q\left(\frac{5x-3}{2}\right) = x^4 - 5x^2 + 13$

   $\Rightarrow$ **$Q\left(\frac{7}{2}\right)$ = ?**

   A) 7 B) 8 C) 9 D) 10 E) 11

9. $P(4x-1) = x^2 + x - 1$

⇒ **P(2) = ?**

A) $\frac{1}{16}$ B) $\frac{1}{8}$ C) $\frac{3}{16}$ D) $\frac{1}{4}$ E) $\frac{5}{16}$

10. $P(x^2) = x^6 - 3x^4 + 2x^2 + 1$

⇒ **P(3) = ?**

A) 7 B) 13 C) 29 D) 46 E) 72

11. $Q(x^2 - 3) = 4x^4 - x^3 + 2x^2 + 4x - 3$

⇒ **Q(1) = ?**

A) 54 B) 57 C) 60 D) 65 E) 69

12. $P(x^4) = 3x^8 + 4x^4 - 2$

⇒ **P(–6) = ?**

A) 82 B) 80 C) 78 D) 76 E) 74

13. $P(x^2 + 3) = x^6 + 3x^4 - 11x^2 - 17$

⇒ **P(–1) = ?**

A) 11 B) 10 C) 9 D) 8 E) 7

14. $P(x, y) = 2x^2y - x^3y + 4y - 5$

⇒ **P(1, 2) = ?**

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

15. $P(x) = x^2 + 4x + 4$

⇒ **P(x – 1) = ?**

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

16. $P(x - 1) = x^2 - 2x + 1$

⇒ **P(x) = ?**

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

1. C	2. C	3. E	4. C	5. B	6. C	7. D	8. C
9. E	10. A	11. E	12. A	13. A	14. D	15. C	16. A

1. $P(x) = x^2 + 3x - 5$

   $\Rightarrow$ **$2 \cdot P(2) - P(3) = ?$**

   A) -7 B) -3 C) 1 D) 6 E) 11

2. $P(x) = x^3 + (n-2)x + 3$

   $P(3) = 15$

   $\Rightarrow$ **$P(-2) = ?$**

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

3. $Q(x) = 5x - 7$

   $\Rightarrow$ **$Q(2x + 3) = ?$**

   A) $5x + 10$ B) $5x - 10$ C) $10x - 7$
   D) $10x + 8$ E) $10x + 21$

4. $P(x) = 3x^2 - 5$

   $\Rightarrow$ **$P(2 - x) = ?$**

   A) $3x^2 - 10$ B) $-3x^2 + 7x$ C) $x^2 + x + 7$
   D) $3x^2 - 12x + 7$ E) $6x^2 - 3x + 5$

5. $P(2x - 1) = 4x^2 + 1$

   $\Rightarrow$ **$P(x) = ?$**

   A) $x^2 + 2x + 2$ B) $x^2 - x$ C) $2x^2 + 5x + 1$
   D) $4x^2 - x + 4$ E) $4x^2 - 1$

6. $P(x^2) = x^6 - 3x^2 + 5$

   $\Rightarrow$ **$P(x) = ?$**

   A) $x^2 - 3x + 5$ B) $x^3 - x + 1$ C) $x^3 - 3x + 5$
   D) $x^4 - 3x + 4$ E) $x^3 - x + 6$

7. $P(x^2 + 2x - 1) = (x^2 + 2x)^2 + 3x^2 + 6x - 3$

   $\Rightarrow$ **$P(x) = ?$**

   A) $x^4 - 3x^2 + x + 1$ B) $x^2 - 2x - 1$
   C) $x - 2$ D) $x^2 + 5x + 1$
   E) $x^3 - 2x^2 + 1$

8. $P(x^2 - 3) = x^4 - 6x^2 + 11$

   $\Rightarrow$ **$P(7) = ?$**

   A) 25 B) 37 C) 43 D) 51 E) 67

9. $P(x) = ax^2 + 2x - 3$

$\Rightarrow P(3) - P(-3) = ?$

A) 4 B) 6 C) 8 D) 12 E) 16

10. $P(x - 1) = x^2 - 3x$

$\Rightarrow P(x + 1) = ?$

A) $x^2 + x - 2$ B) $x^2 - x - 2$ C) $x^2 + x + 2$
D) $x^2 - x + 2$ E) $x^2 - x - 6$

11. $P(x^2 + 1) = 3x^2 + 9$

$\Rightarrow P(x) = ?$

A) $4x - 5$ B) $3x + 9$ C) $3x - 6$
D) $3x + 6$ E) $3x$

12. $P(x - 1) = x^3 - 3x^2 + 3x - 5$

$\Rightarrow P(x^2) = ?$

A) $x^2 - 6$ B) $x^2 - 4$ C) $x^3 - 4$
D) $x^6 - 6$ E) $x^6 - 4$

13. $P(x) = x^3 - 4x^2 + 3x - 2$

$Q(x) = 3x^2 + x - 1$

$\Rightarrow P(x) + 2 \cdot Q(x) = ?$

A) $x^3 + 2x^2 + 3x - 4$ B) $x^3 + 2x^2 - 3$
C) $x^3 + 2x^2 + 5x - 4$ D) $x^2 + 5x - 4$
E) $x^3 + 4x - 7$

14. $P(x) = 2x^2 - 3x + 1$

$Q(x) = x - 3$

$\Rightarrow P(x) - x \cdot Q(x) = ?$

A) $x^2 - 2x + 1$ B) $3x^2 + 1$ C) $x^2 + 1$
D) $x^2 - 3x + 1$ E) $3x^2 - 3x - 2$

15. $P(x) = x^2 - 4$

$Q(x) = 3x - 1$

$\Rightarrow P(x) \cdot Q(x) = ?$

A) $3x^3 - x^2 - 12x + 4$ B) $3x^5 - x^2 - 12x + 4$
C) $3x^3 - 12x + 4$ D) $3x^3 + x^2 - 12x + 4$
E) $5x^3 - x^2 - 12x + 4$

16. $P(x) = 4x^2 - x + 3$

$Q(x) = x^2 + 3x - 1$

$\Rightarrow P(x) - 3Q(x) = ?$

A) $x^2 - 4x + 4$ B) $x^2 - 10x + 4$ C) $2x^2 - 10x + 6$
D) $x^2 - 8x - 6$ E) $x^2 - 10x + 6$

1. B	2. E	3. D	4. D	5. A	6. C	7. D	8. D
9. D	10. A	11. D	12. E	13. C	14. C	15. A	16. E

1. $P(x) = 4x - 5$

$Q(x) = x^2 - 2$

$\Rightarrow$ **$x \cdot P(x) + Q(x) = ?$**

A) $x^2 + 4x - 7$ B) $5x - 7$ C) $5x^2 - 4x - 10$ D) $5x^2 - 5x - 2$ E) $x^2 - 4x + 3$

2. $P(x) = (-2x^4 + x^3 - 3x^2 + 5x - 4)(x^3 + 2x^2 + 3)$

$P(x) = ax^7 + bx^6 + cx^5 + ...$

$\Rightarrow$ **$c = ?$**

A) -3 B) -1 C) 0 D) 1 E) 6

3. $P(x) = (4x^6 - 2x^5 + 3x^4 - 2x + 1)(x^5 - 3x^4 - 2x^3 - x^2 + x + 3)$

$P(x) = ax^{11} + bx^{10} + cx^9 + dx^8 + ex^7$

$\Rightarrow$ **$c + e = ?$**

A) -3 B) -1 C) 0 D) 1 E) 8

4. $P(x) = 3x + 5$

$\Rightarrow$ **$P(7) + 2P[P(-1)] = ?$**

A) 24 B) 26 C) 30 D) 37 E) 48

5. $\forall x \in R$

$P(x) = (a - 3)x^3 - 2x^2 - (b - 4)x - 8$

$Q(x) = 3x^3 + (c + 1)x^2 - 10x - d^3$

$P(x) = Q(x)$

$\Rightarrow$ **$a + b + c + d = ?$**

A) 0 B) 7 C) 13 D) 19 E) 22

6. $\forall x \in R, a \in R^+$

$P(x) = (a^2 - 1)x^2 + 4x - b - 1$

$Q(x) = 8x^2 + (a + b)x - c$

$P(x) = Q(x)$

$\Rightarrow$ **$c = ?$**

A) 2 B) 4 C) 6 D) 8 E) 10

7. $\forall x \in R$

$(a - 3)x^2 + (b + 2)x + c - 4 = 0$

$\Rightarrow$ **$a + b + c = ?$**

A) 2 B) 3 C) 4 D) 5 E) 7

8. $\forall x \in R$

$P(x) = x^2 - 3x - 2$

$Q(x) = x^2 + ax + b$

$P(x - 1) = Q(x)$

$\Rightarrow$ **$a + b = ?$**

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

9. $(x-1)(x+4) = ax^2 + bx + c$

$\Rightarrow$ **a + b·c = ?**

A) −13 B) −11 C) −1 D) 0 E) 8

10. $(2x+3)(3x-1) = ax^2 + bx + c$

$\Rightarrow$ **a + b + c = ?**

A) 3 B) 4 C) 7 D) 8 E) 10

11. $P(x) = 3x^2 + (a-1)$

$Q(x) = (b-4)x^2 + 5$

$P(x) = Q(x)$

$\Rightarrow$ **a·b = ?**

A) 30 B) 35 C) 42 D) 48 E) 56

12. $(a-2)x^2 + 3x + (a^2+b) = x^2 - (b+1)x + c$

$\Rightarrow$ **c = ?**

A) −1 B) 3 C) 5 D) 9 E) 13

13. $\forall x \in R$

$$\frac{2x+1}{x^2+x-6} = \frac{A}{x-2} + \frac{B}{x+3}$$

$\Rightarrow$ **A + B = ?**

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

14. $\forall x \in R$

$$\frac{2x+8}{x^2-4} = \frac{A}{x-2} + \frac{B}{x+2}$$

$\Rightarrow$ **A·B = ?**

A) −3 B) −1 C) 4 D) 8 E) 12

15. $$\frac{-8}{x^2+2x-3} = \frac{A}{x-1} + \frac{B}{x+3}$$

$\Rightarrow$ **A − B = ?**

A) −8 B) −4 C) 0 D) 4 E) 8

16. $$\frac{2x-10}{x^2+2x-8} = \frac{A}{x+4} + \frac{B}{x-2}$$

$\Rightarrow \frac{A}{B} = ?$

A) −3 B) −2 C) 1 D) 2 E) 3

1. D	2. B	3. D	4. E	5. D	6. A	7. D	8. B
9. B	10. E	11. C	12. C	13. D	14. A	15. B	16. A

1. $\frac{2x}{x^2-4} = \frac{A}{x-2} + \frac{B}{x+2}$

$\Rightarrow \mathbf{A^2 + B^2 = ?}$

A) 2 B) 5 C) 10 D) 13 E) 25

2. $P(x) = 3x^2 + 2x - 1$

$Q(x) = ax^2 + bx + c$

$P(x-1) = Q(x)$

$\Rightarrow \mathbf{a + b + c = ?}$

A) 7 B) 5 C) 1 D) 0 E) -1

3. $P(x) = 2x^2 - 1$

$Q(x) = ax^2 + bx + c$

$P(x+2) = Q(x)$

$\Rightarrow \mathbf{a \cdot b - c = ?}$

A) 3 B) 6 C) 9 D) 12 E) 15

4. $\frac{x+5}{x^2+4x+3} = \frac{A}{x+1} + \frac{B}{x+3}$

$\Rightarrow \frac{\mathbf{A}}{\mathbf{B}} \mathbf{= ?}$

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

5. $4x + 7 = a \cdot (x+1) + b \cdot (x-2)$

$\Rightarrow \mathbf{a - b = ?}$

A) 0 B) 3 C) 4 D) 6 E) 9

6. $\frac{5x+1}{x^2+x-2} = \frac{A}{x-1} + \frac{B}{x+2}$

$\Rightarrow \mathbf{A \,.\, B = ?}$

A) -1 B) 3 C) 6 D) 8 E) 10

7. $3 \cdot P(x) + P(-x) = 2x - 8$

$\Rightarrow \mathbf{P(x) = ?}$

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

8. $4 \cdot P(2x) - 3 \cdot P(x) = 10x - 1$

$\Rightarrow \mathbf{P(x) = ?}$

A) $2x-1$ B) $2x-4$ C) $2x+1$
D) $10x-1$ E) $\frac{10-x}{2}$

9. $P(x) + P(x-1) = 6x + 1$

$\Rightarrow$ **P(2) = ?**

A) 3 B) 5 C) 7 D) 8 E) 13

10. $P(x) \cdot P(x+1) = x^2 + 7x + 12$

$\Rightarrow$ **P(x) = ?**

A) $x + 4$ B) $x + 3$ C) $x - 3$
D) $2x + 1$ E) $2x - 1$

11. $P(x) \cdot P(2x) = 8x^2 + 6x + 1$

$\Rightarrow$ **P(3) = ?**

A) 5 B) 7 C) 9 D) 11 E) 13

12. $2P(x) - P(x+1) = x^2 - 4x + 5$

$\Rightarrow$ **P(x) = ?**

A) $x^2 + 2x + 4$ B) $x^2 - 3x + 5$ C) $x^2 - 3x - 4$
D) $x^2 - x + 1$ E) $x^2 - 2x + 4$

13. $P(x) = (3x^4 - 5)^3$

$\Rightarrow$ **d[P(x)] = ?**

A) 5 B) 4 C) 7 D) 12 E) 15

14. $P(x) = 2 \cdot (x^3 + 1)^4 \cdot (x^2 - 1)^2$

$\Rightarrow$ **d[P(x)] = ?**

A) 16 B) 14 C) 12 D) 10 E) 9

15. $P(x) = (5x^2 + 3)^{n+2}$

$d[P(x)] = 10$

$\Rightarrow$ **n = ?**

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

16. P(x) polinom (polynomial)

$d[P(x)] = 3$

$\Rightarrow$ **$d[x^2 \cdot P(x^3)]$ = ?**

A) 13 B) 11 C) 9 D) 5 E) 3

1. A	2. E	3. C	4. A	5. D	6. C	7. D	8. A
9. D	10. B	11. B	12. E	13. D	14. A	15. C	16. B

1. P(x), Q(x) polinom (polynomial)

d[P(x)] = 3

d[Q(x)] = 2

⇒ **d[P(x)·Q(x)] = ?**

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

2. P(x), Q(x) polinom (polynomial)

d[P(x)] = 7

d[Q(x)] = 2

$\Rightarrow \mathbf{d}\left[\frac{\mathbf{P(x)+Q(x)}}{\mathbf{Q(x^2)}}\right] = ?$

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

3. P(x), Q(x) polinom (polynomial)

d[P(x)·Q(x)] = 8

$d\left[\frac{P(x)}{Q(x)}\right] = 2$

⇒ **d[P(3x)] = ?**

A) 2 B) 4 C) 5 D) 7 E) 10

4. $P(x) = (x^3 - 2x + 1)\cdot(x^4 - 2)^3$

⇒ **d[P(x)] = ?**

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

5. $P(x) = (x^2 + 2)^2\cdot(x^4)$

⇒ **d[P(x²)] = ?**

A) 2 B) 4 C) 8 D) 10 E) 16

6. $P(x) = 2x^4 - 5x^2 + 1$

⇒ **d[x²·P(x³)] = ?**

A) 4 B) 8 C) 10 D) 14 E) 16

7. $P(x) = x^{3n+1} + 2x^6 - 3x^3 - 7$

d[P(x)] = 10

⇒ **n = ?**

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

8. $P(x) = (2x^4 - x^3 - 1)^3\cdot(x^2 - 4x)^n$

d[P(x)] = 22

⇒ **n = ?**

A) 5 B) 7 C) 9 D) 11 E) 14

9. P(x) polinom (*polynomial*)

$P(x) = 3x^{n-2} + 2x^{5-n} + 4$

$\Rightarrow$ **? < n < ?**

A) $1 < n < 6$ B) $2 \leq n \leq 5$ C) $2 < n$

D) $n < 5$ E) $-5 \leq n \leq 2$

10. P(x) polinom (*polynomial*)

$P(x) = 2x^{n-3} + x^{\frac{12}{n}} - 7$

$\Rightarrow \sum$ **n = ?**

A) 7 B) 13 C) 25 D) 34 E) 38

11. P(x) polinom (*polynomial*)

$P(x) = x^3 - x^{n-5} + 3x^{\frac{20}{n-3}}$

$\Rightarrow$ **max d[P(x)] = ?**

A) 10 B) 14 C) 18 D) 19 E) 23

12. $(x + 1) \cdot P(x) = x^2 - 3x + m$

$\Rightarrow$ **m = ?**

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

13. $(x - 2) \cdot P(x) = 2x^2 - mx + 6$

$\Rightarrow$ **m = ?**

A) -7 B) -5 C) 0 D) 5 E) 7

14. $(x - 1) \cdot P(x) = 3x^2 + mx - 4$

$\Rightarrow$ **P(2) = ?**

A) 3 B) 8 C) 10 D) 17 E) 23

15. $(x - 3) \cdot P(x) = x^2 + mx + 6$

$\Rightarrow$ **P(–1) = ?**

A) -3 B) -1 C) 3 D) 7 E) 10

16. $(x + 2) \cdot P(x) = 2x^2 + 3x + k$

$\Rightarrow$ **P(k) = ?**

A) -1 B) -2 C) -5 D) -7 E) -11

1. D	2. B	3. C	4. D	5. E	6. D	7. C	8. A
9. B	10. C	11. C	12. A	13. E	14. C	15. A	16. C

1. $P(x) = 7x^5 - 4x^3 + 6x^2 - 11x + 4$

P(x) polinomunun katsayılar toplamı kaçtır?
What is the sum of the coefficients of P(x) polynomial?

A) 2 B) 5 C) 9 D) 13 E) 17

2. $P(x) = (x^3 - 2x^2 + 7)^2$

P(x) polinomunun katsayılar toplamı kaçtır?
What is the sum of the coefficients of P(x) polynomial?

A) 1 B) 4 C) 9 D) 36 E) 49

3. $P(x) = (3x^3 + 4x^2 - 2x - 3)^3$

P(x) polinomunun sabit terimi kaçtır?
What is the constant term of P(x) polynomial?

A) 27 B) 8 C) 2 D) −8 E) −27

4. $P(x) = x^2 - 4x + a$

P(x) polinomunun sabit terimi 3
if the constant term of P(x) is 3
⇒ P(3) = ?

A) 0 B) 3 C) 7 D) 13 E) 21

5. $P(x) = 2x^2 - 4x + k$

P(x) polinomunun katsayılar toplamı 9
The sum of coefficients of P(x) is 9
⇒ k = ?

A) 7 B) 9 C) 11 D) 14 E) 16

6. $P(x + 3) = x^3 + 4x^2 - 7x - 13$

P(x) polinomunun sabit terimi kaçtır?
What is the constant term of P(x) polynomial?

A) 8 B) 14 C) 17 D) 20 E) 36

7. $P(x) = 2x^3 - 5x^2 - 3$

P(x + 1) polinomunun katsayılar toplamı kaçtır?
What is the sum of the coefficients of P(x + 1) polynomial?

A) −7 B) −3 C) 0 D) 3 E) 7

8. $P(x) = (5x^3 + 4x^2 - m)^3$

P(x) polinomunun sabit terimi 8
is the constant term of P(x) is 8
⇒ m = ?

A) −6 B) −2 C) 0 D) 1 E) 3

9. $P(x) = x^2 + 4x + 2$

P(x + 1) polinomunun katsayılar toplamı kaçtır?
What is the sum of the coefficients of P(x + 1) polynomial?

A) 6 B) 10 C) 14 D) 20 E) 22

10. $P(x - 1) = x^3 + ax^2 + 2x$

P(x + 1) polinomunun katsayılar toplamı 6
The sum of the coefficients of P(x + 1) is 6
⇒ a = ?

A) −5 B) −3 C) 3 D) 7 E) 9

11. $P(2x - 1) = x^2 - 4x + 1$

P(2x + 1) polinomunun katsayılar toplamı kaçtır?
What is the sum of the coefficients of P(2x + 1) polynomial?

A) −9 B) −6 C) −3 D) 1 E) 5

12. $P(x + 2) = 3x^2 + 4x - 1$

P(x + 1) polinomunun katsayılar toplamı kaçtır?
What is the sum of the coefficients of P(x + 1) polynomial?

A) −6 B) −1 C) 3 D) 6 E) 14

13. $P(x - 3) = 2x^2 - 3x + 5$

P(x + 2) polinomunun katsayılar toplamı kaçtır?
What is the sum of the coefficients of P(x + 2) polynomial?

A) 4 B) 5 C) 10 D) 32 E) 59

14. $P(x + 2) = x^2 - 2x - 1$

P(x − 3) polinomunun sabit terimi kaçtır?
What is the constant term of P(x − 3) polynomial?

A) 2 B) 9 C) 21 D) 34 E) 48

15. $P(x) = x \cdot Q(x - 1) - 4x + 3$

P(x) polinomunun katsayılar toplamı 5 ise Q(x) polinomunun sabit terimi kaçtır?
If the sum of coefficients of P(x) polynomial is 5 What is the constant term of Q(x) polynomial?

A) −4 B) −2 C) 3 D) 6 E) 8

16. $P(x + 2) + Q(x + 1) = 2x^2 - 3a + 6$

P(x) polinomunun katsayılar toplamı 5, Q(x) polinomunun sabit terimi −6
The sum of coefficients of P(x) polynomial is 5, the constant term of Q(x) polynomial is −6
⇒ a = ?

A) 3 B) 6 C) 7 D) 13 E) 18

1. A	2. D	3. E	4. A	5. C	6. C	7. A	8. B
9. C	10. B	11. C	12. B	13. E	14. D	15. D	16. A

1. $P(x) = (2x^3 + 4x - 2)^3 + (3x^2 - 1)^7$

P(x) polinomunun sabit terimi kaçtır?
What is the constant term of P(x) polynomial?

A) −19 B) −12 C) −9 D) −4 E) 0

2. $P(x) = (3x^2 + ax + 2)^3$

P(x) polinomunun katsayılar toplamı 27 olduğuna göre a kaçtır?
As th sum of coefficients of P(x) polynomial is a 27, What is a?

A) −3 B) −2 C) 1 D) 3 E) 6

3. $P(2x - 1) = x^2 - 4x + 8$

P(x + 2) polinomunun katsayılar toplamı kaçtır?
What is the sum of the coefficients of P(x + 2) polynomial?

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

4. $P(x + 2) = x \cdot Q(x + 3) - 2x + n$

P(x) polinomunun sabit terimi −3, Q(x) polinomunun katsayılar toplamı 1
The constant term of P(x) polynomial −3, the sum of the coefficients of Q(x) polynomial is 1
⇒ n = ?

A) −5 B) −2 C) 1 D) 7 E) 12

5. $P(2x - 1) = x^2 + mx + 5 - m$

P(x) polinomunun katsayılar toplamı kaçtır?
What is the sum of the coefficients of P(x) polynomial?

A) 3 B) 6 C) m + 9 D) −m E) 5 − m

6. $P(x + 2) = x^3 - 2x^2 + ax + 4$

P(x) polinomunun sabit terimi −2 ise p(x) polinomunun katsayılar toplamı kaçtır?
If the constant term of P(x) polynomial −2, What is the sum of coefficients of P(x)?

A) −7 B) −5 C) −3 D) 6 E) 9

7. $x \cdot P(x - 5) = 3 \cdot Q\left(\frac{x-2}{3}\right) + 2x^2 - m$

P(x) polinomunun sabit terimi 9, Q(x) polinomunun katsayılar toplamı 3
The constant term of P(x) polynomial 9, the sum of the coefficients of Q(x) polynomial is 3
⇒ m = ?

A) 2 B) 6 C) 11 D) 14 E) 17

8. $P(x) = 2x^3 - 4x^2 + ax + 3a - 4$

P(x + 2) polinomunun katsayılar toplamı −10 olduğuna göre P(2x −3) polinomunun katsayılar toplamı kaçtır?
As the sun of coefficients of P(x + 2) polynomial is −10, What ist the sum of coefficients of P(2x − 3) polynomial?

A) −8 B) −10 C) −14 D) −18 E) −22

9. $Q[P(x-2)-1] = 3x^2 - 4x + 6 - m$

P(x) polinomunun sabit terimi 2, Q(x) polinomunun katsayılar toplamı 15
If the constant term of P(x) poylnomial, –2, what is the sum of coefficients of Q(x)
⇒ m = ?

A) –5 B) –3 C) 4 D) 7 E) 11

10. $P(x-1) = 3x^2 - 2x + a - 3$

P(x + 1) polinomunun katsayılar toplamı 15 ise a kaçtır?
As the sum of coefficients of P(x + 1) poylnomial is 15, what is a ?

A) –5 B) –3 C) 2 D) 4 E) 11

11. $P(2x-3) = x^2 - 3x + 6$

P(x + 4) polinomunun katsayılar toplamı kaçtır?
What is the sum of the coefficients of P(x + 4) polynomial?

A) 5 B) 7 C) 9 D) 10 E) 12

12. $P(x) = x^2 + ax - 2a$

P(x) polinomunun sabit terimi 2 olduğuna göre, P(x – 1) polinomunun sabit terimi kaçtır?
As the constant term of P(x) polynomial is 2, what is the constant term of P(x – 1) polynomial?

A) 5 B) 4 C) 3 D) 0 E) –1

13. $P(4x+7) = x^3 - 2x^2 + 3$

P(x + 3) polinomunun sabit terimi kaçtır?
What is the constant's term of P(x + 3) poylnomial?
⇒ m = ?

A) –3 B) –1 C) 0 D) 1 E) 3

14. $P(x-a) = \frac{2x+a}{5}$

P(x – 1) polinomunun sabit terimi 2 ise a = ?
As the constant term of P(x – 1) is 2, what is a?

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

15. $P(x) = (3a-1)x^2 + ax$

$Q(x) = ax^2 + 2ax - 3$

P(x) polinomunun katsayılar toplamı 7 ise Q(x) polinomunun katsayılar toplamı kaçtır?
As the sum of coefficients of P(x) polynomial is 7, what is the sum of coefficients of Q(x) polynomial?

A) 7 B) 5 C) 3 D) 1 E) –2

16. $P(x-2) + Q(x-4) = x^3 - 7x + 5$

P(x + 1) polinomunun katsayılar toplamı 3 ise Q(x) polinomunun sabit terimi kaçtır?
As the sum of coefficients of P(x + 1) polynomial is 3, what is the constants term of Q(x) polynomial?

A) 28 B) 32 C) 34 D) 38 E) 41

1. C	2. B	3. D	4. A	5. B	6. D	7. D	8. D
9. A	10. B	11. D	12. B	13. C	14. A	15. C	16. D

1. $x^2 - 5x - 7$ | $x + 3$ — B(x); K(x)

⇒ **K(x) = ?**

A) -4 B) -1 C) 0 D) 12 E) 17

2. $x^4 + 5x^3 + 4x^2 - 2x - 2$ | $x + 1$ — B(x); K(x)

⇒ **B(x) = ?**

A) $x^3 + 4x^2 - 2$ B) $x^3 - x$ C) $x^3 + 5$
D) $x^3 + 2x^2 + 7$ E) $x^3 + x - 2$

3. $x^5 + 2x^3 + 2x^2 - 3x + 6$ | $x^2 + 3$ — B(x); K(x)

⇒ **B(x) = ?**

A) $x^3 - x + 3$ B) $x^3 - x + 2$ C) $x^3 + 7$
D) $x^3 + x - 2$ E) $2x^3 + x + 4$

4. $x^4 - x^3 + x^2 + 2x$ | $x^2 - x$ — B(x); K(x)

⇒ **K(x) = ?**

A) $x + 2$ B) $3x$ C) $-2x + 1$
D) x E) $-x + 4$

5. $2x^3 + 6x + 5$ | $x^2 - x + 1$ — B(x); K(x)

⇒ **K(x) = ?**

A) $2x + 1$ B) $6x + 3$ C) $x + 7$
D) $3x - 1$ E) $4x + 3$

6. $4x^3 + 2x^2 - x + 1$ | $x^2 + 2x - 1$ — B(x); K(x)

⇒ **K(x) = ?**

A) $10x - 2$ B) $15x - 5$ C) $5x - 7$
D) $x + 3$ E) $2x$

7. $x^2 + 5x - 3$ | $x + 1$ — B(x); K(x)

⇒ **K(x) = ?**

A) -12 B) -7 C) 3 D) 9 E) 12

8. $x^3 + 3x - 1$ | $x - 2$ — B(x); K(x)

⇒ **B(x) + K(x) = ?**

A) $x^2 + x + 2$ B) $x^2 + x$ C) $x^2 - 7$
D) $x^2 + 2x + 20$ E) $x^2 + 2x + 9$

9. $\dfrac{3x^5 - x^4 + x^3 - 6x^2 + 2x - 2}{3x^2 - x + 1} = ?$

A) $x^3 - 2$ B) $x^3 - x + 1$ C) $x^3 + x$
D) $x^3 + x + 9$ E) $x^3 + 2x$

10. $P(x) = 2x^3 + x - 3$

$P(x) \mid x - 1$
$-$
$K(x)$

⇒ **K(x) = ?**

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

11. $P(x) \mid x + 2$
$-$
K

$P(x + 1) = x^2 - x - 4$

⇒ **K = ?**

A) 0 B) 4 C) 8 D) 9 E) 13

12. $P(x+1) \mid x - 3$
$-$
K

$P(x) = x^3 + 2x^2 - 5$

⇒ **K = ?**

A) 26 B) 42 C) 67 D) 91 E) 105

13. $P(x - 3) \mid x - 4$
$-$
K

$P(x + 2) = 2x^3 + 3x^2 - 4x + 6$

⇒ **K = ?**

A) 5 B) 7 C) 9 D) 11 E) 13

14. $P(x) \mid x + 1$
$-$
3

$P(x - 2) = 4x^2 + ax - 3$

⇒ **a = ?**

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

15. $P(x - 2) \mid x + 3$
$-$
7

$P(x + 1) = 2x^2 + ax + 13$

⇒ **a = ?**

A) 4 B) 7 C) 9 D) 11 E) 13

16. $P(x) \mid x - 1$
$-$
4

$Q(x + 1) \mid x + 3$
$-$
3

$P(x + 2) + Q(x - 1) = x^2 + 4ax + 2$

⇒ **a = ?**

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

1. E	2. A	3. B	4. B	5. B	6. B	7. B	8. D
9. A	10. C	11. C	12. D	13. D	14. B	15. E	16. B

1. $P(x-2) \mid x+3$ — remainder 6; $Q(x+1) \mid x$ — remainder 3

$P(x-3) + Q(x+3) = ax^2 + 4x - 3$

⇒ **a = ?**

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

2. $P(x-2a) \mid x-a$ — remainder 2 $\quad a < 0$

$P(x) = x^2 - 5x - 4$

⇒ **a = ?**

A) −12 B) −6 C) −4 D) −2 E) −1

3. $x^4 + 2x^2 - 3 \mid x^2 - 1$ — remainder K

⇒ **K = ?**

A) −2 B) −1 C) 0 D) 1 E) 2

4. $3x^6 - 2x^3 + 4 \mid x^3 + 2$ — remainder K

⇒ **K = ?**

A) 5 B) 9 C) 12 D) 20 E) 23

5. $x^5 - 3x^3 + x^2 + 4 \mid x^2 - 3$ — remainder K

⇒ **K = ?**

A) 5 B) 7 C) 9 D) 11 E) 14

6. $x^3 - 4x^2 + 5 \mid x^2 - 2$ — remainder K

⇒ **K = ?**

A) 1 − x B) x + 3 C) 2x − 3 D) 4x E) 3x − 1

7. $x^8 + x^4 + 1 \mid x^2 - \sqrt{3}$ — remainder K

⇒ **K = ?**

A) 27 B) 19 C) 13 D) 7 E) 3

8. $2x^{16} - 3x^8 + 5 \mid x^4 + \sqrt{5}$ — remainder K

⇒ **K = ?**

A) 40 B) 35 C) 27 D) 19 E) 8

9. $2x^8 + 3x^7 + x^3 + 4 \mid x^3 - 2$

$-$

$ax^2 + bx + c$

$\Rightarrow$ **a + b + c = ?**

A) 4 B) 9 C) 12 D) 19 E) 26

10. $x^3 + ax^2 + b - 3 \mid x^2 + x$

$-$

$-3x + 5$

$\Rightarrow$ **a + b = ?**

A) 7 B) 12 C) 21 D) 30 E) 42

11. $P(x,y) = (x - y - 4)^3 + (x - y - 2)$

$P(x \cdot y) \mid x - y - 1$

$-$

K

$\Rightarrow$ **K = ?**

A) −28 B) −17 C) 12 D) 15 E) 25

12. $P(x, y) = (2x - 3y + 1)^2 + (3y - 2x - 5) + 1$

$P(x, y) \mid 2x - 3y - 2$

$-$

K

$\Rightarrow$ **K = ?**

A) 11 B) 9 C) 6 D) 3 E) 0

13. $P(x-2) = x^3 - ax + 2a + 1$

$P(x-1) \mid x - 2$

$-$

18

$\Rightarrow$ **a = ?**

A) 9 B) 10 C) 12 D) 16 E) 20

14. $P(2x - 3) \mid x - 1$ $\qquad$ $Q(x) \mid x + 2$

$-$ $\qquad$ $-$

2 $\qquad$ -1

$$H(x) = \frac{P(x-2) + x}{Q(x-3)}$$

$\Rightarrow$ **H(1) = ?**

A) 4 B) 3 C) −1 D) −2 E) −3

15. $P(3 - x) \mid x + 2$

$-$

K

$P(x + 5) = x^3 - x + 1$

$\Rightarrow$ **K = ?**

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

16. $4x^3 + x^2 + bx + c \mid x^2 - 2$

$-$

$x + 5$

$\Rightarrow$ **b + c = ?**

A) −6 B) −4 C) −2 D) 2 E) 5

1. A	2. B	3. C	4. D	5. B	6. C	7. C	8. A
9. E	10. B	11. A	12. D	13. B	14. E	15. A	16. B

1. $5x^4 - x^2 + x$ | $x^2 - x + 1$ = B(x), remainder K

⇒ **B(x) = ?**

A) $5x^2 + x - 1$ B) $5x^2 + 2x + 3$
C) $5x^2 + 5x - 1$ D) $5x^2 + x - 4$
E) $5x^2 + 3$

2. $x^3 - 2x^2 + 1$ | $x^2 + 2$ = K, remainder K

⇒ **K = ?**

A) $2x + 1$ B) $x + 7$ C) $-x + 9$
D) $-2x + 5$ E) $x - 1$

3. $x^9 + 3x^7 + 2x^3 + ax + b$ | $x^3 + 1$ = $3x + 5$, remainder 0

⇒ **a·b = ?**

A) -2 B) -1 C) 0 D) 3 E) 7

4. $x^8 + x^4 - 8$ | $x^2 - \sqrt{3}$ = K, remainder K

⇒ **K = ?**

A) 8 B) 7 C) 6 D) 4 E) 1

5. P(x) | $x - 1$ = K(x), remainder 9

P(x) | $x + 3$ = K(x), remainder 1

⇒ P(x) | $x^2 + 2x - 3$ = K(x), remainder K(x)

⇒ **K(x) = ?**

A) $3x - 1$ B) $2x + 7$ C) $x + 5$
D) $x - 3$ E) $1 - 3x$

6. P(x) | $x - 3$ = K(x), remainder 5

P(x) | $x + 3$ = K(x), remainder -1

⇒ P(x) | $x^2 - 9$ = K(x), remainder K(x)

⇒ **K(x) = ?**

A) $x + 2$ B) $x - 3$ C) $2x + 3$
D) $1 - 2x$ E) x

7. $x^3 + ax^2 + bx - 15$ | $(x - 1)(x + 3)$ = K(x), remainder 0

⇒ **a − b = ?**

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

8. $x^3 + ax^2 + bx + 5$ | $(x + 1)(x - 2)$ = K(x), remainder 3

⇒ **a + b = ?**

A) 6 B) 2 C) 0 D) -1 E) -3

9. $P(x)$ | $x^2 - 9$; remainder: $2x + 1$ $\quad$ $P(x)$ | $x + 3$; remainder: K

⇒ **K = ?**

A) 3 B) 2 C) −1 D) −3 E) −5

10. $P(x)$ | $x^2 - 16$; remainder: $3x - 2$ $\quad$ $P(x)$ | $x - 4$; remainder: K

⇒ **K = ?**

A) 21 B) 15 C) 10 D) 7 E) 5

11. $P(x)$ | $x^2 - 5x + 6$; remainder: $2x + 3$ $\quad$ $P(x)$ | $x - 3$; remainder: K

⇒ **K = ?**

A) 17 B) 12 C) 9 D) 4 E) 1

12. $P(x)$ | $x^2 + 3x$; remainder: $x + 5$ $\quad$ $P(x)$ | $x + 3$; remainder: K

⇒ **K = ?**

A) −2 B) 0 C) 2 D) 4 E) 8

13. $P(x)$ | $(x - 1)^2$; remainder: $4x + 7$ $\quad$ $P(x)$ | $x - 1$; remainder: K

⇒ **K = ?**

A) 7 B) 11 C) 14 D) 17 E) 21

14. $P(x)$ | $x^3 + 8$; remainder: $x^2 + x + 3$ $\quad$ $P(x)$ | $x^2 - 2x + 4$; remainder: K

⇒ **K = ?**

A) $2x + 1$ B) $x + 3$ C) $3x - 1$ D) $x + 2$ E) $1 - 2x$

15. $P(x)$ | $x^3 - 125$; remainder: $x^2 + 4x + 13$ $\quad$ $P(x)$ | $x^2 + 5x + 25$; remainder: K

⇒ **K = ?**

A) $-x - 12$ B) x C) $7 - x$ D) $x + 5$ E) $3 - x$

16. $P(x)$ | $x^2 + 3x - 1$; remainder: $2x + 3$ $\quad$ $P^2(x)$ | $x^2 + 3x - 1$; remainder: K

⇒ **K = ?**

A) 7 B) 9 C) 11 D) 13 E) 20

1. C	2. D	3. C	4. D	5. B	6. A	7. C	8. E
9. E	10. C	11. C	12. C	13. B	14. C	15. A	16. D

1. $x^4 + 3x^2 + m$ | $x^2 - 1$

$-$

0

$\Rightarrow$ **m = ?**

A) 7 B) 4 C) −1 D) −4 E) −8

2. $P(x)$ | $x^2 - 3x + 2$

$-$

$2x + 3$

$P(x)$ | $x - 1$

$-$

K

$\Rightarrow$ **K = ?**

A) 12 B) 7 C) 5 D) 2 E) 1

3. $P(x - 3)$ | $x - 1$

$-$

3

$Q(x)$ | $x + 1$

$-$

5

$3P(x) - 2Q(x + 1) = 4x + k$

$\Rightarrow$ **k = ?**

A) 12 B) 7 C) 5 D) 2 E) 1

4. $x^3 + 3x^2 - 2x + 4$ | $x^2 + 3x - 1$

$-$

$K(x)$

$\Rightarrow$ **K(x) = ?**

A) $-x + 4$ B) x C) $7x + 4$

D) $2x + 4$ E) $x - 3$

5. $x^3 + 3x^2 - 2x + 4$ | $x - 1$

$-$ | $B(x)$

$K(x)$

$\Rightarrow$ **B(x) = ?**

A) $x^2 - x + 2$ B) $x^2 - 3x + 5$

C) $x^2 + 4x + 2$ D) $x^2 - x + 1$

E) $x^2 - 4$

6. $P(x^3 + 2) = x^6 + 2x^3 + 1$

$P(x)$ | $x - 3$

$-$

K

$\Rightarrow$ **K = ?**

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

7. $P(x^3 + 2) = x^9 + 2x^6 + x^3 + 15$

$P(x)$ | $x + 1$

$-$

K

$\Rightarrow$ **K = ?**

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

8. $P(x^3 + 1) = x^9 + x^6 + x^3 - 4$

$P(x)$ | $x - 4$

$-$

K

$\Rightarrow$ **K = ?**

A) 35 B) 32 C) 26 D) 10 E) 7

9. $2x^4 + x^3 + ax^2 + bx - 3$ | $x^2 - 1$

$-$

$x + 4$

$\Rightarrow$ **a + b = ?**

A) 7 B) 6 C) 5 D) 4 E) 2

10. $3x^2 + 5x - 7$ | $x^2 - x$

$-$

$ax + b$

$\Rightarrow$ **a + b = ?**

A) 1 B) 4 C) 6 D) 9 E) 11

11. $P(x) = (x^2 - 3x + 4)^2 + 2(x^2 - 3x) + 5$

$P(x)$ | $x^2 - 3x + 5$

$-$

K

$\Rightarrow$ **K = ?**

A) -7 B) -6 C) -4 D) 2 E) 8

12. $P(x - 1) = ax + b$

$P(x + 5)$ | $P(x - 2)$

$-$

K

$\Rightarrow$ **K = ?**

A) $-2a$ B) a C) 0 D) a + b E) 7a

13. $P(x + 1) = ax + b$

$P(x + 3)$ | $x - 1$

$-$

K

$\Rightarrow$ **K = ?**

A) 4a + b B) 3a + b C) b

D) $-a + b$ E) 4a

14. $\frac{P(3x - 2)}{Q(x - 1)} = 2x^2 - x + 5$

$P(x)$ | $x - 1$

$-$

2

$Q(x)$ | x

$-$

K

$\Rightarrow$ **K = ?**

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

15. $P(x) = x^3 + ax^2 + b - 1$

$P(x)$ | $x^2 - x - 1$

$-$

$3x - 5$

$\Rightarrow$ **a + b = ?**

A) -5 B) -2 C) 0 D) 3 E) 6

16. $2x^3 + 4x^2 - x + 5$ | $x - 2$

$-$ | $B(x)$

$K(x)$

$\Rightarrow$ **B(x) + K(x) = ?**

A) $x^2 - x + 1$ B) $x^2 + 4$

C) $x^2 - 2x + 4$ D) $2x^2 + 8x + 50$

E) $2x^2 + 6x + 25$

1. D	2. C	3. B	4. A	5. C	6. B	7. A	8. A
9. C	10. A	11. C	12. E	13. B	14. E	15. A	16. D

1.
$$\begin{array}{l|l} x^{756} & x^2-1 \\ \cline{2-2} - & B(x) \\ \cline{1-1} K(x) & \end{array}$$

$\Rightarrow$ **B(1) · B(0) = ?**

A) 377 B) 378 C) 754 D) 756 E) 758

2. $P(x) = ax^3 + bx^2 + cx + d$

$P(-4) = P(2) = P(3) = 0$

$P(0) = 12$

$\Rightarrow$ **P(4) = ?**

A) 1 B) 2 C) 4 D) 8 E) 16

3. $P(\sqrt[5]{x^3}) = x^{12} - 3x^9 + 4x^6 - 1$

$$\begin{array}{l|l} P(x) & x+1 \\ \cline{2-2} - & \\ \cline{1-1} K & \end{array}$$

$\Rightarrow$ **K = ?**

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

4.
$$\begin{array}{l|l} x^4 + 3x^2 + ax + b - 2 & x^2 - x - 1 \\ \cline{2-2} - & \\ \cline{1-1} 9x + 2 & \end{array}$$

$\Rightarrow$ **a + b = ?**

A) −2 B) −1 C) 1 D) 2 E) 3

5. $P(x+1) = x^3 + x^2 - ax + b$

$P(x-1) = x^3 - 4x^2 + 3x - 1$

$\Rightarrow$ **b − a = ?**

A) −3 B) −1 C) 0 D) 1 E) 3

6.
$$\begin{array}{l|l} P(x) & x^2 + 2x + 4 \\ \cline{2-2} - & \\ \cline{1-1} x + 3 & \end{array} \qquad \begin{array}{l|l} P(x) & x^3 - 8 \\ \cline{2-2} - & \\ \cline{1-1} 3x^2 - ax + 15 & \end{array}$$

$\Rightarrow$ **a = ?**

A) −3 B) −4 C) −5 D) −6 E) −7

7.
$$\begin{array}{l|l} P(x) & x^2 + 3 \\ \cline{2-2} - & x + a \\ \cline{1-1} 0 & \end{array} \qquad \begin{array}{l|l} P(3x) & 3x - 2 \\ \cline{2-2} - & \\ \cline{1-1} 21 & \end{array}$$

$\Rightarrow$ **P(3) = ?**

A) 9 B) 12 C) 21 D) 24 E) 48

8. $d[P(2x^2) \cdot Q^3(x)] = 14$

$d\left[\dfrac{x \cdot P(x^3)}{Q^3(2x)}\right] = 7$

$\Rightarrow$ **d[Q(x + 1) = ?**

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