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MATHEMATICS TEST - CHAPTER 5: DIVISION OF POLYNOMIALS

Name:		Roll No.		Section:

Total Time: 3:20 Hour
Time Allowed: 200 Minutes

Total Marks: 200

PAPER OBJECTIVE
SECTION-A (MARKS 200)

NOTE: Section-A is compulsory. All parts of this section are to be answered on these pages and handed over to the center superintendent. Deleting / overwriting is not allowed. Do not use lead pencil.

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

Questions	A	B	C	D	A B C D
1. A statement in which variables or constants or both are connected by arithmetic operations (+, −, ×, ÷) is called an:	identity	inequality	equation	algebraic expression	○○○●
2. The three kinds of algebraic expressions are polynomial, rational and:	irrational expressions	trigonometric expressions	exponential expressions	logarithmic expressions	●○○○
3. Polynomials are algebraic expressions in which the exponents of the variables are:	negative integers	whole numbers	fractions	irrational numbers	○●○○
4. Which of the following is a polynomial?	$3x^2 + 2x + 1$	$1/x + 2$	$\sqrt{x} + 3$	$x^{-2} + 1$	●○○○
5. Which of the following is NOT a polynomial?	$2y^2 + y$	$x^3 - 5$	$y^2 + 1/y$	7	○○●○
6. The expression x^{-2} is not a polynomial because its exponent is not a:	variable	negative number	whole number	positive fraction	○○●○
7. The general form of a polynomial is P(x) =	$a_n x^{-n} + \ldots + a_0$	$a_n x^n + a_{n-1} x^{n-1} + \ldots + a_1 x + a_0$	$a_n \sqrt{x} + \ldots + a_0$	$a_n / x^n + \ldots + a_0$	○●○○
8. The highest exponent of the variable in a polynomial is called its:	degree	coefficient	root	quotient	●○○○
9. The degree of the polynomial $5x^4 - 3x + 2$ is:	3	4	5	2	○●○○
10. When more than one variable is multiplied in a term, the degree of that term is:	the product of the exponents	the number of variables	the largest exponent only	the sum of the exponents of the variables	○○○●
11. The degree of the term $4x^3y$ is:	4	1	7	3	●○○○
12. The degree of the polynomial $3x^2y^3 + 2x$ is:	3	6	2	5	○○○●
13. The degree of the polynomial $(x^2 + 1)(x^3 - 2)$ is:	3	2	5	6	○○●○
14. A polynomial whose coefficients are all zero is called a:	quadratic polynomial	constant polynomial	linear polynomial	zero polynomial	○○○●

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Questions	A	B	C	D	A B C D
15. The zero polynomial has:	no degree	degree zero	degree two	degree one	●○○○
16. A polynomial of degree zero is called a:	cubic polynomial	linear polynomial	constant polynomial	quadratic polynomial	○○●○
17. A polynomial of degree one is called a:	linear polynomial	constant polynomial	quadratic polynomial	cubic polynomial	●○○○
18. A polynomial of degree two is called a:	linear polynomial	quadratic polynomial	cubic polynomial	bi-quadratic polynomial	○●○○
19. A polynomial of degree three is called a:	bi-quadratic polynomial	cubic polynomial	linear polynomial	quadratic polynomial	○●○○
20. A polynomial of degree four is called a:	quadratic polynomial	constant polynomial	cubic polynomial	bi-quadratic polynomial	○○○●
21. The polynomial $9x^3 - 7x + 5$ is a:	bi-quadratic polynomial	quadratic polynomial	cubic polynomial	linear polynomial	○○●○
22. The polynomial $x^4 - x + 1$ is a:	linear polynomial	cubic polynomial	bi-quadratic polynomial	quadratic polynomial	○○●○
23. The polynomial $2x^2 + 7$ is a:	cubic polynomial	quadratic polynomial	linear polynomial	constant polynomial	○●○○
24. The polynomial 5 is a:	quadratic polynomial	linear polynomial	zero polynomial	constant polynomial	○○○●
25. An algebraic expression of the form P(x)/Q(x), where P and Q are polynomials and Q is not the zero polynomial, is called a:	polynomial	irrational expression	constant	rational expression	○○○●
26. Which of the following is a rational expression?	$\sqrt{(x + 2)}$	$x^{1/2} + 3$	$\sqrt{x} + 1$	$(2x - 1)/(x^2 + 3)$	○○○●
27. An algebraic expression that cannot be written in the form P(x)/Q(x) is called an:	identity	polynomial	irrational expression	rational expression	○○●○
28. Which of the following is an irrational expression?	$\sqrt{(x + y)}$	$3x/(x + 2)$	$x^2 + 1$	$(x + 1)/(x - 1)$	●○○○
29. In the division of polynomials, the relation holds that dividend equals:	divisor + quotient + remainder	divisor × quotient + remainder	divisor × remainder + quotient	quotient/divisor + remainder	○●○○
30. The degree of the dividend is always:	less than the degree of the remainder	less than the degree of the divisor	equal to zero	greater than or equal to the degree of the divisor	○○○●
31. The degree of the remainder is always:	equal to the degree of the dividend	greater than the degree of the quotient	less than the degree of the divisor	greater than the degree of the divisor	○○●○

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Questions	A	B	C	D	A B C D
32. The division of polynomials is done by the:	matrix method	integration method	truncation method	long division method	○○○●
33. When $x^4 + 3x^2 + 1$ is divided by $x^2 - 2x + 3$, the quotient is:	$x^2 + 4$	$x^2 - 2x + 4$	$x^2 + 2x - 4$	$x^2 + 2x + 4$	○○○●
34. When $x^4 + 3x^2 + 1$ is divided by $x^2 - 2x + 3$, the remainder is:	$4x - 11$	$2x - 11$	$11 - 2x$	$2x + 11$	○●○○
35. To divide $x^4 + 3x^2 + 1$, it is written with the missing terms as:	$x^4 + 0x^3 + 3x^2 + 0x + 1$	$x^4 + 3x^2 + 1x + 0$	$x^4 + 3x + 1$	$x^4 + x^3 + 3x^2 + x + 1$	●○○○
36. When $x^3 - 6x^2 + 14x - 8$ is divided by $x - 2$, the quotient is:	$x^2 - 4x - 6$	$x^2 + 4x + 6$	$x^2 - 8x + 6$	$x^2 - 4x + 6$	○○○●
37. When $x^3 - 6x^2 + 14x - 8$ is divided by $x - 2$, the remainder is:	0	-4	2	4	○○○●
38. The statement of the remainder theorem is: if p(x) is divided by (x − c), the remainder is:	p(0)	p(−c)	p(c)	c	○○●○
39. The remainder theorem is a helpful tool for finding the remainder:	only by long division	without long division	only for linear polynomials	only by synthetic division	○●○○
40. The remainder when $x^3 - 5x^2 + 7x - 6$ is divided by $x - 3$ is:	-6	-3	0	3	○●○○
41. The remainder when $2x^3 + 3x^2 - 4x + 1$ is divided by $x + 2$ is:	1	0	-5	5	○○○●
42. The remainder when p(x) is divided by x + 2 is:	p(−2)	p(0)	−2	p(2)	●○○○
43. In the proof of the remainder theorem we substitute x = c in:	p(x) = (x − c)q(x) + r	p(x) = r	p(x) = q(x)	p(x) = (x + c)q(x)	●○○○
44. In the proof of the remainder theorem, substituting x = c makes the term (c − c)q(c) equal to:	0	r	c	1	●○○○
45. If $3x^4 - 4px^2 + 5x - p$ is divided by x + 2 and the remainder is 4, then p equals:	3	2	1	−2	○●○○
46. The value of k for which $(x + 2)^3 + (3x + k)$ has x + 3 as a factor is:	−10	2	3	10	○○○●
47. If $x^3 + qx^2 - 7x + 6$ is exactly divisible by x + 1, then q equals:	12	−6	−12	6	○○●○
48. If $2x^3 + 3x^2 - 3x - m$ leaves remainder 16 when divided by x − 2, then m equals:	−6	22	38	6	○○○●

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Questions	A	B	C	D	A B C D
49. If 2 is a zero of $x^3 + 5x^2 - 4x + k$, then k equals:	−20	−10	20	10	●○○○
50. If f(x) divided by x − 2 gives remainder 12, then f(2) is:	12	2	−12	0	●○○○
51. If (x − b) is a factor of q(x), then q(b) is:	b	0	−b	1	○●○○
52. Every factor of a polynomial is a divisor, but:	every divisor is a factor	a factor is never a divisor	no divisor is a factor	every divisor is not a factor	○○○●
53. In 11 pencils shared among 5 students, the quotient and remainder are:	2 and 1	5 and 1	2 and 0	1 and 2	●○○○
54. The values of x which satisfy p(x) = 0 are called the:	degrees of the polynomial	coefficients of the polynomial	quotients of the polynomial	zeros of the polynomial	○○○●
55. The zeros of the polynomial p(x) are the same as the solutions of the equation:	p(x) = 0	p(x) = 1	p(x) = x	p(x) = c	●○○○
56. The zeros of $x^2 - 25$ are:	5 and −5	0 and 5	25 and −25	5 only	●○○○
57. Is −3 a zero of $2x^4 + 7x^3 - 4x^2 - 27x - 18$?	Yes, since p(3) = 0	Cannot be determined	Yes, since p(−3) = 0	No, since p(−3) ≠ 0	○○●○
58. Of the numbers 1 and −2, the zero of $x^2 - 7x + 6$ is:	1 only	−2 only	both 1 and −2	neither 1 nor −2	●○○○
59. The polynomial whose zeros are 0, 6 and −1 is:	$x^3 + 5x^2 - 6x$	$x^3 - 5x^2 - 6x$	$x^3 - 6x^2 - x$	$x^3 + 7x^2 + 6x$	○●○○
60. If −1/2 is a zero of $2x^3 + x^2 - 2x - 1$, the other zeros are:	1/2 and −1	2 and −2	1 and −1	0 and 1	○○●○
61. The factor theorem states that p(x) has a factor (x − c) if and only if:	p(c) = 1	p(0) = c	p(c) = 0	p(−c) = 0	○○●○
62. The factor theorem is a result of the:	Pythagoras theorem	De Moivre's theorem	binomial theorem	remainder theorem	○○○●
63. If (x − c) is a factor of p(x), then the remainder on dividing p(x) by (x − c) is:	zero	p(0)	one	c	●○○○
64. The remainder theorem tells us that dividing P(x) by (x − a) gives remainder:	P(−a)	P(0)	P(a)	a	○○●○
65. The factor theorem tells us that if a is a zero of P(x), then:	P(x) is a constant	(x − a) is a factor of P(x)	P(x) has no factor	(x + a) is a factor of P(x)	○●○○

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Questions	A	B	C	D	A B C D
66. $x - 3$ is a factor of $x^3 - 2x^2 - 5x + 6$ because:	the value at $x = 3$ is 0	the value at $x = 3$ is 6	the degree is 3	the value at $x = -3$ is 0	●○○○
67. $(x - 4)$ is a factor of $x^3 - x^2 - 14x + 8$ because the remainder f(4) is:	8	16	-8	0	○○○●
68. The quotient on dividing $x^3 - x^2 - 14x + 8$ by $x - 4$ is:	$x^2 + 3x + 2$	$x^2 + 5x + 6$	$x^2 - 3x - 2$	$x^2 + 3x - 2$	○○○●
69. The first step in factorizing a cubic polynomial by the factor theorem is to:	find its degree only	differentiate the polynomial	take the square root	substitute values like ±1, ±2, ±3 to find a root	○○○●
70. The second step in factorizing a cubic polynomial is to:	divide it by the linear factor found	multiply by the quotient	substitute large values	take the remainder	●○○○
71. The third step in factorizing a cubic polynomial is to:	add the factors	factorize the quadratic factor if possible	substitute zero	divide again by x	○●○○
72. A cubic polynomial can have at most how many linear factors?	1	2	3	4	○○●○
73. The factors of a cubic polynomial with integer coefficients are found by trying the factors of its:	leading coefficient only	remainder	degree	constant term	○○○●
74. If $(2y + 1)$ and $(y - 2)$ are two linear factors of $2y^3 + y^2 - 8y - 4$, the third factor is:	$2y - 1$	$y - 2$	$y + 2$	$y + 4$	○○●○
75. For $x^3 - 5x - 2$, which linear factor is found by the factor theorem?	$x + 1$	$x - 1$	$x - 2$	$x + 2$	○○○●
76. After dividing $x^3 - 5x - 2$ by $x + 2$, the quadratic factor is:	$x^2 + 2x + 1$	$x^2 - 2x + 1$	$x^2 + 2x - 1$	$x^2 - 2x - 1$	○○○●
77. If $x - 2$ is a factor of $2x^3 - 15x^2 + 16x + 12$, the other factors are:	$(2x + 1)$ and $(x - 6)$	$(2x + 1)$ and $(x + 6)$	$(x + 1)$ and $(2x - 6)$	$(2x - 1)$ and $(x + 6)$	●○○○
78. The zeros of $2x^3 + 3x^2 - 11x - 6$ are:	2, $-1/2$ and 3	2, 1/2 and 3	-2, 1/2 and 3	2, $-1/2$ and -3	○○○●
79. The factorization of $2x^3 + 3x^2 - 11x - 6$ is:	$(x - 2)(x + 1)(x + 3)$	$(x + 2)(2x - 1)(x - 3)$	$(x - 2)(2x - 1)(x + 3)$	$(x - 2)(2x + 1)(x + 3)$	○○○●
80. A rectangular room has volume $(x^3 + 11x^2 + 34x + 24)$ cubic feet and height $(x + 1)$ feet. The area of its floor is:	$x^2 + 10x + 24$	$x^2 + 12x + 24$	$x^2 + 11x + 24$	$x^2 + 10x + 34$	●○○○
81. In the volume of the room, volume equals:	area of the floor/height	area of the floor + height	area of the floor × height	perimeter × height	○○●○
82. The height of a ball is $h(t) = -16t^2 + 80t + 5$ feet after t seconds. The initial height at $t = 0$ is:	5 feet	0 feet	69 feet	80 feet	●○○○

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Questions	A	B	C	D	A B C D
83. For $h(t) = -16t^2 + 80t + 5$, the height after 4 seconds is:	85 feet	69 feet	64 feet	5 feet	○●○○
84. The value of h(4) equals the remainder when the polynomial h(t) is divided by:	(t + 4)	(t − 5)	(t − 4)	t	○○●○
85. A rectangular solid has volume 72 cubic units. The width is twice the height and the length is 7 more than the height. The height is:	6	2	4	3	○●○○
86. In the same solid, the width and the length are respectively:	4 and 9	6 and 9	3 and 10	4 and 7	●○○○
87. A wooden box of volume 120 cm^3 has length 7 cm more than its height and width 3 cm less than its height. The height is:	8 cm	6 cm	5 cm	4 cm	○○●○
88. For the above box, the length and width are respectively:	10 cm and 2 cm	11 cm and 3 cm	12 cm and 2 cm	12 cm and 3 cm	○○●○
89. The number of tickets sold is $t(x) = x^3 - 12x^2 + 48x + 74$. The number sold in the twelfth game is:	650	576	74	724	●○○○
90. A rectangular solid has volume 144 cubic units, width twice the height and length 2 more than the width. The height is:	4	2	3	6	○○●○
91. For the above solid, the width and the length are respectively:	6 and 10	3 and 5	6 and 8	4 and 6	○○●○
92. The area of rectangle ACED is $6x^2 + 38x + 56$ and its width is 2x + 8. Its length is:	2x + 7	3x + 7	3x + 6	3x + 8	○●○○
93. The volume of a box is $y^3 - 2y^2 - y + 2$ and one side is y − 2. The other two sides are:	(y + 1) and (y + 2)	(y − 1) and (y − 2)	(y − 1) and (y + 1)	(y + 1) and (y − 3)	○○●○
94. The degree of a polynomial divisor is 2. The degree of its remainder can be at most:	0	1	3	2	○●○○
95. If p(x) is of degree 5 and is divided by a polynomial of degree 2, the degree of the quotient is:	7	2	5	3	○○○●
96. If p(x) is divided by a linear polynomial, the remainder is:	a quadratic polynomial	a linear polynomial	a constant	always zero	○○●○
97. If a polynomial is exactly divisible by its divisor, the remainder is:	the divisor	one	zero	the quotient	○○●○
98. The polynomial $x^2 - 9$ has factors:	(x − 3)(x + 3)	(x − 9)(x + 1)	$(x + 3)^2$	$(x - 3)^2$	●○○○
99. The polynomial $x^3 - 8$ has the factor:	x + 8	x − 2	x − 4	x + 2	○●○○

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Questions	A	B	C	D	A B C D
100. The polynomial $x^3 + 27$ has the factor:	$x + 9$	$x + 3$	$x - 27$	$x - 3$	○●○○
101. The remainder when $x^2 + 5x + 6$ is divided by $x + 2$ is:	0	6	2	-2	●○○○
102. The remainder when $x^2 + 5x + 6$ is divided by $x + 1$ is:	0	6	2	12	○○●○
103. The remainder when $x^3 + 1$ is divided by $x + 1$ is:	-2	2	0	1	○○●○
104. The remainder when $x^3 - 1$ is divided by $x - 1$ is:	-1	1	0	2	○○●○
105. The remainder when $x^4 - 1$ is divided by $x + 1$ is:	0	1	2	-2	●○○○
106. The remainder when $x^3 + x^2 + x + 1$ is divided by $x - 1$ is:	4	1	3	0	●○○○
107. The remainder when $2x^2 - 3x + 5$ is divided by $x - 2$ is:	5	7	11	3	○●○○
108. The remainder when $x^2 + 4$ is divided by $x - 3$ is:	5	7	13	9	○○●○
109. The remainder when $x^3 - 3x^2 + 2x$ is divided by $x - 2$ is:	0	4	2	-2	●○○○
110. For $p(x) = x^2 - 3x + 2$, the value $p(1)$ is:	-2	6	2	0	○○○●
111. For $p(x) = x^2 - 3x + 2$, the value $p(2)$ is:	2	-1	1	0	○○○●
112. The zeros of $x^2 - 3x + 2$ are:	-1 and -2	0 and 3	1 and -2	1 and 2	○○○●
113. The zeros of $x^2 + 5x + 6$ are:	2 and 3	-2 and -3	-1 and -6	1 and 6	○●○○
114. The zeros of $x^2 - 16$ are:	8 and -8	16 and -16	4 and -4	4 only	○○●○
115. The number of zeros of a non-zero polynomial of degree n is at most:	2n	n	$n - 1$	$n + 1$	○●○○
116. A quadratic polynomial has at most how many zeros?	2	4	3	1	●○○○

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Questions	A	B	C	D	A B C D
117. A cubic polynomial has at most how many zeros?	3	4	2	1	●○○○
118. A linear polynomial ax + b (a ≠ 0) has the zero:	a/b	b/a	−b/a	−a/b	○○●○
119. The zero of the polynomial 2x + 5 is:	−5/2	5/2	−2/5	2/5	●○○○
120. In the example of 2x + 5 = 9, the root of the equation is:	7	14	4	2	○○○●
121. The factor theorem helps in deciding whether a given linear expression is:	the degree of the polynomial	a constant	a factor of the polynomial	the quotient of two polynomials	○○●○
122. If p(c) ≠ 0, then (x − c):	is the remainder	is a factor of p(x)	is the quotient	is not a factor of p(x)	○○○●
123. If x + 1 is a factor of p(x), then p(−1) equals:	−1	0	1	2	○●○○
124. If x − 5 is a factor of $x^2 + kx - 15$, then k equals:	10	−2	2	−10	○●○○
125. If x + 2 is a factor of $x^2 + kx + 6$, then k equals:	−3	−5	3	5	○○○●
126. The remainder when $x^2 + kx + 1$ is divided by x − 1 equals 4. Then k is:	−2	2	4	3	○●○○
127. A polynomial p(x) leaves remainders 3 and 5 when divided by (x − 1) and (x − 2) respectively. The values p(1) and p(2) are:	0 and 0	3 and 5	1 and 2	5 and 3	○●○○
128. The linear factors of $x^2 - 5x + 6$ are:	(x + 2)(x + 3)	(x + 1)(x − 6)	(x − 1)(x − 6)	(x − 2)(x − 3)	○○○●
129. The linear factors of $x^3 - x$ are:	$(x - 1)(x + 1)^2$	$x^2(x - 1)$	x(x − 1)(x + 1)	$x(x - 1)^2$	○○●○
130. The linear factors of $x^3 - 6x^2 + 11x - 6$ are:	(x − 1)(x + 2)(x − 3)	(x − 1)(x − 2)(x + 3)	(x + 1)(x + 2)(x + 3)	(x − 1)(x − 2)(x − 3)	○○○●
131. The zeros of $x^3 - 6x^2 + 11x - 6$ are:	1, 2 and −3	1, −2 and 3	1, 2 and 3	−1, −2 and −3	○○●○
132. The linear factors of $x^3 + 6x^2 + 11x + 6$ are:	(x + 1)(x + 2)(x − 3)	(x + 1)(x + 2)(x + 3)	(x − 1)(x − 2)(x − 3)	(x + 1)(x − 2)(x + 3)	○●○○
133. The polynomial $x^3 - 7x + 6$ has the zero:	1	−1	6	−6	●○○○

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Questions	A	B	C	D	A B C D
134. The polynomial $x^3 - 7x + 6$ has the factors:	$(x-1)(x-2)(x-3)$	$(x-1)(x+2)(x+3)$	$(x+1)(x+2)(x-3)$	$(x-1)(x-2)(x+3)$	○○○●
135. The sum of the zeros of $x^2 - 5x + 6$ is:	5	−6	−5	6	●○○○
136. The product of the zeros of $x^2 - 5x + 6$ is:	6	5	−6	−5	●○○○
137. Dividing $x^2 + 7x + 12$ by $x + 3$ gives quotient:	$x + 4$	$x - 4$	$x + 12$	$x + 3$	●○○○
138. Dividing $x^2 - 5x + 6$ by $x - 2$ gives quotient:	$x + 2$	$x - 2$	$x - 3$	$x + 3$	○○●○
139. Dividing $x^3 - 27$ by $x - 3$ gives quotient:	$x^2 - 3x + 9$	$x^2 + 3x + 9$	$x^2 + 9$	$x^2 + 3x - 9$	○●○○
140. Dividing $x^3 + 8$ by $x + 2$ gives quotient:	$x^2 - 2x + 4$	$x^2 + 2x + 4$	$x^2 + 4$	$x^2 - 4$	●○○○
141. Dividing $6x^2 + 5x - 6$ by $2x - 1$ gives quotient and remainder:	$3x - 4$ and -2	$3x + 4$ and -2	$3x + 4$ and 2	$3x - 4$ and 2	○●○○
142. Dividing $4x^2 - 9$ by $2x + 3$ gives quotient:	$2x + 3$	$2x - 9$	$2x - 3$	$4x - 3$	○○●○
143. Dividing $x^2 + 1$ by $x - 1$ gives quotient and remainder:	$x - 1$ and 2	$x + 1$ and 2	$x - 1$ and 0	$x + 1$ and 0	○●○○
144. Remainder theorem and factor theorem are applied to polynomials in:	no variables	any number of variables always	one variable	two variables only	○○●○
145. The difference between the remainder theorem and the factor theorem is that the remainder theorem gives the:	only the quotient	only the degree	remainder for any divisor of the form $x - a$	only the zeros	○○●○
146. The remainder theorem is used to differentiate polynomials by finding their:	derivatives	degrees only	integrals	remainder values quickly	○○○●
147. The remainder formula can be used in modelling the height of a ball since h(4) equals the remainder on division by:	$t - 4$	$4t$	$t^2 - 16$	$t + 4$	●○○○
148. A quotient of a polynomial division of degree 5 by degree 3 has degree:	3	2	8	5	○●○○
149. When a polynomial of degree n is divided by a linear factor, the quotient has degree:	n	$n + 1$	1	$n - 1$	○○○●
150. Synthetic division is a shortcut for dividing a polynomial by a:	linear factor of the form $x - c$	quadratic factor	cubic factor	constant	●○○○

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Questions	A	B	C	D	A B C D
151. In synthetic division by $x - c$, the numbers used in the multiplication step are multiples of:	the dividend	the remainder	the quotient	c	○○○●
152. The last number obtained in synthetic division by $x - c$ is the:	degree	remainder	divisor	quotient	○●○○
153. The first number in the bottom row of synthetic division is the:	leading coefficient of the dividend	root	constant term of the dividend	remainder	●○○○
154. The remainder when $x^3 - 2x^2 + x - 3$ is divided by $x - 2$ is:	1	-3	3	-1	○○○●
155. The remainder when $x^4 - 3x^2 + 2$ is divided by $x + 1$ is:	-2	2	0	1	○○●○
156. The remainder when $2x^3 - x^2 + 4$ is divided by $x - 1$ is:	6	4	5	3	○○●○
157. The remainder when $x^3 + 2x^2 - 5x$ is divided by $x + 3$ is:	12	0	6	-6	○○●○
158. The remainder when $x^2 - x + 1$ is divided by $x + 2$ is:	7	1	3	5	●○○○
159. The remainder when $3x^2 + 2x - 1$ is divided by $x - 1$ is:	0	3	2	4	○○○●
160. The remainder when $x^5 - 1$ is divided by $x - 1$ is:	1	0	2	-1	○●○○
161. The remainder when $x^5 + 1$ is divided by $x + 1$ is:	-2	0	1	2	○●○○
162. The zeros of $x^3 - 4x^2 + x + 6$ are:	2, 3 and -1	2, -3 and 1	-2, -3 and 1	1, 2 and 3	●○○○
163. The factorization of $x^3 - 4x^2 + x + 6$ is:	$(x + 2)(x + 3)(x - 1)$	$(x - 2)(x - 3)(x + 1)$	$(x - 1)(x - 2)(x - 3)$	$(x + 1)(x + 2)(x - 3)$	○●○○
164. The factorization of $x^3 + x^2 - 4x - 4$ is:	$(x + 1)(x - 2)(x - 2)$	$(x + 1)(x - 2)(x + 2)$	$(x - 1)(x - 2)(x + 2)$	$(x + 1)(x + 4)(x - 1)$	○●○○
165. The zeros of $x^3 - 3x^2 - 4x + 12$ are:	3, 4 and -1	-3, 2 and -2	3, 2 and -2	3, 1 and -4	○○●○
166. The factorization of $x^3 - 2x^2 - 5x + 6$ is:	$(x - 1)(x - 3)(x - 2)$	$(x - 1)(x + 3)(x - 2)$	$(x - 1)(x - 3)(x + 2)$	$(x + 1)(x + 3)(x - 2)$	○○●○
167. The value of k for which $x - 1$ is a factor of $x^3 + kx - 2$ is:	1	0	-1	2	●○○○

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Questions	A	B	C	D	A B C D
168. The value of a for which x + 1 is a factor of $x^3 + ax^2 + x + 1$ is:	1	−1	2	0	●○○○
169. Is 2 a zero of $x^3 - 8$?	Cannot be decided	No	Yes	Only if the degree is 2	○○●○
170. Is x + 1 a factor of $x^2 + 3x + 2$?	Yes, since p(1) = 0	Yes, since p(−1) = 0	No, since p(−1) = 6	No, since p(1) = 0	○●○○
171. Is x − 2 a factor of $x^2 + x + 2$?	No, since p(−2) = 0	Yes, since p(−2) = 0	Yes, since p(2) = 0	No, since p(2) = 8	○○○●
172. If p(x) = (x − a)q(x) + r, then p(a) equals:	r	0	a	q(a)	●○○○
173. The long division process stops when the degree of the remainder is:	equal to the degree of the divisor	less than the degree of the divisor	equal to the degree of the dividend	greater than the degree of the divisor	○●○○
174. The cubic polynomial having zeros 1, 2 and −3 is:	$x^3 + 7x - 6$	$x^3 + 7x + 6$	$x^3 - 7x + 6$	$x^3 - 7x - 6$	○○●○
175. The quadratic polynomial having zeros 2 and 3 is:	$x^2 + x - 6$	$x^2 - 5x + 6$	$x^2 + 5x + 6$	$x^2 - 5x - 6$	○●○○
176. The quadratic polynomial having zeros 1/2 and −2 is:	$2x^2 - 3x - 2$	$2x^2 + 3x - 2$	$2x^2 + 3x + 2$	$x^2 + 3x - 2$	○●○○
177. The polynomial having zeros 0, 1 and 2 is:	$x^3 - 3x^2 + 2x$	$x^3 + 3x^2 + 2x$	$x^3 - 2x^2 + x$	$x^3 - 3x + 2$	●○○○
178. A non-zero constant polynomial such as p(x) = 7 has:	two zeros	no zero	infinitely many zeros	one zero	○●○○
179. Division by the zero polynomial is:	equal to zero	equal to one	not defined	always possible	○○●○
180. A box has volume $x^3 + 6x^2 + 11x + 6$ and height x + 1. Its other two dimensions are:	(x + 2) and (x + 3)	(x − 2) and (x + 3)	(x + 1) and (x + 6)	(x + 2) and (x − 3)	●○○○
181. A rectangular garden has area $x^2 + 7x + 12$ and width x + 3. Its length is:	x + 4	x + 3	x + 9	x + 12	●○○○
182. For the height $h(t) = -16t^2 + 80t + 5$, the height after 2 seconds is:	69 feet	85 feet	37 feet	101 feet	○○○●
183. The roots of the height function tell us the times when the ball is theoretically:	at its highest point	on the ground	at the starting point only	at its fastest	○●○○
184. The factorization of $2x^2 + 3x - 2$ is:	(2x − 1)(x + 2)	(2x + 1)(x − 2)	(2x + 1)(x + 2)	(2x − 1)(x − 2)	●○○○

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Questions	A	B	C	D	A B C D
185. A factor of a polynomial divides it:	only when its degree is zero	only when the quotient is zero	leaving a remainder of one	completely, leaving no remainder	○○○●
186. The quotient when $3x^3$ is divided by x is:	x^2	$3x^2$	3x	$3x^3$	○●○○
187. The quotient when $x^2 - 1$ is divided by $x - 1$ is:	1	x^2	$x + 1$	$x - 1$	○○●○
188. The remainder when $x^4 - 16$ is divided by $x - 2$ is:	−16	0	16	32	○●○○
189. Dividing the polynomial $x^3 + 3x^2 + 3x + 1$ by $x + 1$ gives quotient:	$x^2 + 4x + 1$	$x^2 + 3x + 1$	$x^2 + x + 1$	$x^2 + 2x + 1$	○○○●
190. Which polynomial has a root at x = 3?	$x^2 + 9$	$x^2 - 3$	$x^2 - 9$	$x + 3$	○○●○
191. The polynomial $x^2 + 9$ has real zeros:	3 only	3 and −3	9 and −9	none	○○○●
192. The zero of the polynomial $3x - 6$ is:	3	2	6	−2	○●○○
193. The quotient when $x^2 - 4$ is divided by $x + 2$ is:	$x + 2$	x^2	$x - 2$	$x - 4$	○○●○
194. The quotient when $x^3 - x^2$ is divided by x^2 is:	$x^2 - x$	$x + 1$	$1 - x$	$x - 1$	○○○●
195. If 2 is a zero of $x^2 + kx + 6$, then k equals:	−5	5	2	−2	●○○○
196. The remainder when x^3 is divided by $x - 2$ is:	6	2	0	8	○○○●
197. The remainder when $5x^2$ is divided by $x + 1$ is:	−5	5	1	0	○●○○
198. The value of $x^2 - 2x + 1$ at x = 1 is:	1	2	0	−1	○○●○
199. A polynomial having exactly two terms is called a:	trinomial	binomial	constant	monomial	○●○○
200. A polynomial having exactly three terms is called a:	zero polynomial	trinomial	monomial	binomial	○●○○

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