ECAT Mathematics Chapter 6 Quadratic Equations Online Test

Sr	Questions	Answers Choice
1	Question Image	A. (-1, 2) B. (-1, 1) C. (1, 2) D. {-1}
2	The value of k (k > 0) for which the equation $x^2 + kx + 64 = 0$ and $x^2 - 8x + k = 0$ both will have real roots is	A. 8 B. -16 C. -64 D. 16
3	The condition for polynomial equation $ax2 + bx + c = 0$ to be quadratic is	A. a > 0 B. a < 0 C. $a \neq 0$ D. $a \neq 0, b \neq 0$
4	The sum of the roots of the equation $x2 - 6x + 2 = 0$ is	A. -6 B. 2 C. -2 D. 6
5	$5x^3 + 3x$ - is a _____	A. Polynomial of degree 3 B. Polynomial of degree 2 C. Polynomial of degree 1 D. Polynomial of degree 0
6	Sum of all the four forth roots of unity is	A. 1 B. -1 C. i D. 0
7	The quadratic equation $8 \sec^2\theta - 6 \sec\theta + 1 = 0$ has	A. Infinitely many roots B. Exactly two roots C. Exactly four roots D. No roots
8	Question Image	
9	If one root of $5x2 + 13x + k = 0$ be the reciprocal of the other root the value of k is	A. 0 B. 2 C. 1 D. 5
10	Question Image	A. b = c B. a = c C. a = c D. b = 0
11	Consider the equation $px2 + qx + r = 0$ where p,q,r are real The roots are equal in magnitude but opposite in sign when	A. q = 0, r = 0, $p \neq 0$ B. p = 0, $qr \neq 0$ C. r = 0, $pq \neq 0$ D. q = 0, $pq \neq 0$
12	If α, β are non-real roots of $ax2 + bx + c = 0$ (a,b,c $\in$ Q), then	A. $\alpha = \beta$ B. $\alpha\beta = 1$ C. $\alpha = \beta$ D. $\alpha = 1$
13	If the roots of $ax^2 + bx + c = 0$ are equal in magnitude but opposite in sign, then	A. a = 0 B. b = 0 C. c = 0 D. None of these
14	If a polynomial P(x) is divided by x + a, then the remiander is	A. P(a) B. P(-a) C. P(0) D. None of these
15	If $b^2 - 4ac = 0$ then the roots of the equation are	A. Real and distinct B. Real and equal C. Imaginary D. None of these
16	the largest degree of the terms in the polynomials is called	A. terms of the polynomial B. degree of a polynomial C. co-efficient

		D. monomial
17	If the roots of $ax^2 + b = 0$ are real and distinct then	A. ab > 0 B. a = 0 C. ab < 0 D. a > 0, b > 0
18	$w^{-1} = $ _____	A. 0 B. 1 C. w D. w<sup>2</sup>
19	The solution set of $x^2 - 5x + 6 = 0$ is	A. {1, 3} B. {2, 3} C. {1, 2} D. None of these
20	Both the roots of the equation (x - b) (x - c) + (x - c)(x - a) + (x - a)(x - b) = 0 are always	A. Positive B. Negative C. Real D. None of these
21	Which of the following is factor of x11+a11, where n is an odd integer	A. x-a B. x+a C. 2x-a D. 2x+a
22	The condition for ax2 + bx c to be expressed as the product of linear polynomials is	A. b4 - 4ac =0 B. b4- 4ac ≥0 C. b4- 4ac <0 D. b4= 4ac
23	The cube roots of 8 are	
24	Two quadratic equation in which xy term is missing and the coefficients of x^2 and y^2 are equal, give a linear equation by _____	A. Addition B. Subtraction C. Multiplication D. Division
25	If $x^4 - 10x^2 - 2x + 4$ is divided by x + 3, then the reminder is	A. 1 B. 0 C. 4 D. None of these
26	(1+w)(1+w2)(1+w4)(1+w8)....50 factors	A. 0 B. -1 C. 1 D. 2
27	The polynomial x - a is a factor of the polynomial f(x) if and only if	A. f(a) is positive B. f(a) is negative C. f(a) = 0 D. None of these
28	Question Image	A. 1 B. 2 C. 0 D. 4
29	Question Image	A. Rational B. Irrational C. Non-real D. Zero
30	If $f(x) = ax^2$, and a>0, then the lowest point on the parabola is called.	A. Vertex of parabola B. Co-ordinates of parabola C. Roots of the equation D. Coefficient of the equation
31	A quadratic equation in x is an equation that can be witten in the form	A. ax<sup>2 </sup>+ b = 0 B. ax<sup>3</sup> +b<sup>2</sup>+c=0 C. ax<sup>2</sup> +bx+c=0 D. ax<sup>3</sup> +bx<sup>3</sup>+cx=0
32	The roots of the equation 4x - 3.2x+2 + 32 = 0 would include	A. 1 and 3 B. 1 and 4 C. 1 and 2 D. 2 and 3
33	If $2x^{1/3} + 2x^{-1/3} = 5$, then x is equal to	A. 1 or -1 B. 2 or 1/2 C. 8 or 1/8 D. 4 or 1/4
34	Roots of the equation $9x^2 - 12x + 4 = 0$ are	A. Real and equal B. Real and distinct C. Complex

35	Root of the equation $3^{x-1} + 3^{1-x} =$ is	A. 2 B. 1 C. 0 D. -1
36	Question Image	A. 2 B. 4 **C. 8** D. 16
37	$w^{28} + w^{38} =$ _____	A. 0 B. 1 C. w **D. -1**
38	$w^4 =$ _____	A. 0 B. 1 **C. w** D. w²
39	The product of cube roots of unity is	A. Zero **B. 1** C. -1 D. None of these
40	Question Image	
41	Question Image	A. 1 B. -1 **C. 5** D. 2
42	Question Image	**A. c/a** B. -c/a C. b/a D. -b/a
43	The roots of the equation $ax^2 + bx + c = 0$ are complex/imaginary if	**A. b² - 4ac < 0** B. b² - 4ac = 0 C. b² - 4ac > 0 D. None of these
44	The minimum value of the quadratic function $f(x) = 5x^2 - 11$, is	**A. -11** B. 6 C. -7 D. 7
45	A quadratic equation has two	**A. roots** B. degree C. variables D. constants
46	Roots of the equation $2x^2 - 7x + 3 = 0$ are	**A. Rational** B. Irrational C. Complex D. None of these
47	If x - 1 is a factor of $x^4 - 5x^2 + 4$ then other factor is	A. (x + 2)2(x - 1) B. (x + 2)(x - 1)2 **C. (x+2)(x²- x- 2)** D. (x + 2)2(x - 1)2
48	$2x^3 + 3x + 9$ is a _____	**A. Polynomial of degree 3** B. Quadratic equation C. Cubic equation D. Polynomial of degree 2
49	Roots of the equation $x^2 + 7x + 12 = 0$ are	A. {3, -4} B. {-3, 4} C. {3, 4} **D. {-3, -4}**
50	The roots of (x - a)(x - b) = ab x^2 are always	**A. Real** B. Depends upon a C. Depends upon b D. Depends upon a and b
51	The expression $x^2 - x + 1$ has	A. One proper linear factor **B. No proper linear factor** C. Two proper linear factors D. None of these
52	The vertex of the graph of the quadratic function $f(x) = -x^2 + 6x + 1$, is	A. (-3,10) B. (-3,-10) **C. (3,10)** D. (3,-10)

53	If the roots of $ax^2 + b = 0$ are real and distinct then	A. ab > 0 B. a = 0 C. ab < 0 D. a > 0,b > 0
54	If $x^2 - 7x + a$ has remainder 1 when divided by x + 1, then a = _____	A. -7 B. 7 C. 0 D. None of these
55	For the equation $|x^2| + |x| - 6 = 0$, the roots are	A. One and only one real number B. Real with sum one C. Real with sum zero D. Real with product zero
56	The two parts into which 57 should be divided so that their product is 782 are	A. 43,14 B. 34,23 C. 33,24 D. 44,13
57	If $3x^4 + 4x^3 + x - 5$ is divided by x + 1, then the reminder is	A. 0 B. 7 C. -7 D. 5
58	Which of the following is a factor of $x^3 - 3x^2 + 2x - 6$	A. x + 2 B. x + 3 C. x - 3 D. x - 4
59	If $x^3 - x^2 + 5x + 4$ is divided by x - 2, then the reminder is	A. 0 B. 2 C. 18 D. 14
60	If a parabola opens down, then its vertex is at the	A. Right of the parabola B. Left of parabola C. Lowest point on the parabola D. Highest point on the parabola
61	Only one of the root of $ax^2 + bx + c = 0$, $a \neq 0$ is zero if	A. c = 0 B. c = 0,b≠ 0 C. b = 0,c = 0 D. b = 0,c≠ 0
62	If $w+w2$ is a root of $(x+1)(x+2)(x+3)(x+4) = k$, then	A. k=0 B. k=1 C. k=w D. k=w2
63	The roots of the equations will be equal if $b^2 - 4ac$ is	A. Positive B. Negative C. 1 D. Zero
64	The roots of $px2 - (p-q)x-q=0$ are	A. equal B. Irrational C. Rational D. Imaginary
65	If $\sin\alpha$ and $\cos\alpha$ are the roots of the equation $px^2 + qx + r = 0$, then	A. $p^2 - q^2 + 2pr = 0$ B. $(p + r)^2 = q^2 - r^2$ C. $p^2 + q^2 - 2pr = 0$ D. $(p - r)^2 = q^2 + r^2$
66	If $ax^2 + bx + x = 0$ is satisfied by every value of x, then	A. b = 0, c = 0 B. c = 0 C. b = 0 D. a = b = c = 0
67	Question Image	A. 4 B. 6 C. 8 D. 10
68	Question Image	
69	If a > 0, b > 0, c > 0, then the roots of the equation $ax^2 + bx + c = 0$ are	A. Real and negative B. Non-real with negative real parts C. Real and positive D. Nothing can be said
		A. a B. x

70	A polynomial P(x) has a factor (x-a) if P(a) =	C. 1 D. 0
71	Question Image	
72	If x - 2 is a factor of $ax^2 - 12x + a = 2a$, then a = _____	A. -5 B. 5 C. 0 D. 1
73	Which of the following is factor of $p(x) = 2x^3 + 3x^2 + 3x + 2$?	A. x+1 B. 2x+1 C. 3x+1 D. 2x-1
74	$4^{1+x} + 4^{1-x} = 10$ is called	A. Reciprocal equation B. Exponential equation C. Radical equation D. None of these
75	If a > 0, b > 0, c > 0 then the roots of the equation $ax^2 + bx + c = 0$ are	A. Real and negative B. Non-real with negative real parts C. Real and positive D. Nothing can be said
76	Roots of the equation $x^2 + 2x + 3 = 0$ are	A. Real and equal B. Real and distinct C. Complex D. None of these
77	The value of p for which both the roots of the equation $4x^2 - 20x + (25p^2 + 15p - 66) = 0$ are less than 2, lies in	
78	The quadratic formula is	
79	Question Image	A. 0 B. 1 C. 2 D. 3
80	The solution of the quadratic equation $x^2 - 7x + 10 = 0$, is	A. 2 B. 5 C. 2,5 D. 7
81	The discriminant of the quadratic equation $ax^2 + bx + c = 0$ is	A. $b^2 + 4ac$ B. $b^2 - 4ac$ C. $4ac - b^2$ D. $a^2 - 4ac$
82	Question Image	
83	If $x^3 + ax^2 - a^2x - a^3$ is divided by x + a, then the remainder is	A. 0 B. a^3 C. $2a^3$ D. $-2a^3$
84	if one root of the equation $ix^2 - 2(i + 1)x + (2 - i) = 0$ is 2 - i then the other root is	A. -i B. 2 + i C. i D. 2 - i
85	If the roots of $x^2 + ax + b = 0$ are non-real, then for all real x, $x^2 + ax + b$ is	A. Negative B. Positive C. Zero D. Nothing can be said
86	If $b^2 - 4ac$ is positive then the roots of the equation are	A. Real B. Imaginary C. Positive D. Negative
87	If ax + bx + c = 0 is satisfied by every value of x, then	A. b = 0, c = 0 B. c = 0 C. b = 0 D. a = b = c = 0
88	(x +a)(x +b)(x +c)(x +) = k, k≠0 is reducible to quadratic form only if	A. a+b=c+d B. a+c=b+d C. a+d=b+c D. All are correct
89	The root of the quadratic equation are	A. 3 B. 2 C. 1 D. 4

#	Question	Options
90	If $3x^4 + 4x^3 + x^5$ is divided by $x+1$, which of the following is the remainder	A. 7 B. -2 C. 6 D. 1
91	The vertex of the graph of the quadratic function $f(x) = x^2 - 10$, is	A. (0, -10) B. (-10,0) C. (10,0) D. (0,10)
92	If $x-2$ and $x-1$ both are factors of $x^3 - 3x^3 + 2x - 4p$, then P must equal to	A. 1 B. 2 C. 0 D. -2
93	Question Image	A. Lies between 4 and 7 B. Lies between 5 and 9 C. Has no value between 4 and 7 D. Has no value between 5 and 9
94	The product of the four fourth roots of unity is	A. 0 B. 1 C. -1 D. None of these
95	Another name of quadratic equation is	A. Polynomial B. 2nd degree polynomial C. Linear equation D. simaltaneous equations
96	Question Image	A. Linear equation B. Quadratic equation C. Cubic equation D. None of these
97	If α, β are the roots of $ax^2 + bx + c = 0$ and $\alpha + h, \beta + h$ are the roots of $px^2 + qx + r = 0$, then h =	
98	In a quadratic equation with leading co-efficient 1, a student reads the co-obtain the roots as - 15 and -4. The correct roots are	A. 6, 10 B. -6, -10 C. 8, 8 D. -8, -8
99	Question Image	A. $(a-c)^2 = b^2 - c^2$ B. $(a-c)^2 = b^2 + c^2$ C. $(a+c)^2 = b^2 - c^2$ D. $(a+c)^2 = b^2 + c^2$
100	The roots of $ax^2 + bx + c = 0$ are	A. Rational $\Leftrightarrow b^2 - 4ac \geq 0$ B. Irrational $\Leftrightarrow b^2 - 4ac > 0$ C. Real $\Leftrightarrow b^2 - 4ac \neq 0$ D. Rational $\Leftrightarrow b^2 - 4ac = 0$
101	Question Image	A. -1 B. 0 C. 2 D. 1
102	Question Image	A. Reciprocal equation B. Exponential equation C. Radical equation D. None of these
103	The roots of $ax^2 + bx + c = 0$ are always unequal if	A. $b^2 - 4ac = 0$ B. $b^2 - 4ac \neq 0$ C. $b^2 - 4ac > 0$ D. $b^2 - 4ac \geq 0$
104	The minimum value of the quadratic function $f(x) = x^2 + 6x - 2$, is	A. 11 B. 6 C. -11 D. 13
105	If the equation $x^2 + 2x - 3 = 0$ and $x^2 + 3x - k = 0$ have a common root then the non - zero value of k is	A. 1 B. 3 C. 2 D. 4
106	$w^{11} = $ _____	A. 0 B. 1 C. w D. w^2
107	The roots of the equation will be irrational if $b^2 - 4ac$ is	A. Positive and perfect square B. Positive but not a perfect square

The roots of the equation will be irrational if $b^2 - 4ac$ is

C. Negative
D. Zero

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108   The roots of the equation $2^{2x} - 10.2^x + 16 = 0$ are

A. 2, 8
B. 1, 3
C. 1, 8
D. 2, 3

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109    $w^{-12} =$ _____

A. 0
B. 1
C. w
D. w^2

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110   Roots of the equation $x^2 + 5x - 1 = 0$ are

A. Rational
B. Irrational
C. Complex
D. None of these

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111    $(2 + w)(2 + w^2) =$ _____

A. 1
B. 2
C. 3
D. 0

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112   (x-1) is a factor of

A. $2x^3 - 3x^2 + 9$
B. $2x^3 - 5x - 8$
C. $48x^2 - 46x - 9$
D. $x^9 - 1$

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113    $w^{73} =$ _____

A. 0
B. 1
C. w
D. w^2

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114   The roots of the equation $ax^2 + bx + x = 0$ are real and distinct if

A. $b^2 - 4ac < 0$
B. $b^2 - 4ac = 0$
C. $b^2 - 4ac > 0$
D. None of these

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115   If one root of the equation $x^2 - 3x + a = 0$ is 2 then a = _____

A. 0
B. 1
C. 2
D. 3

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116   The value of x for which the polynomials x2 - 1 and x2 -2x + 1 vanish simultaneously is

A. 2
B. 1
C. -1
D. -2

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117   If the roots of $ax^2 - bx - c = 0$ change by the same quantity, then the expression in a, b, c that does not change is

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118   In quadratic equation $f(x) = ax^2$, if a >0, then the graph of parabola

A. Opens up
B. Opens down
C. close up
D. symmetric w.r.t.x.axis

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119   Question Image

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120   The condition for polynomial equation $ax^2 + bx + c = 0$ to be quadratic is

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121   The maximum value of the quadratic function f(x) = 2x2-4x+7,is

A. 3
B. 5
C. -3
D. -5

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122   For any integer k, $w^n =$ _____ when n = 3k

A. 1
B. 2
C. 0
D. -4

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123   Question Image

A. 15
B. 9
C. 7
D. 8

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124   There are _____ basic techniques for solving a quadratic equation

A. Two
B. Three
C. Four
D. None of these

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125   In quadratic equation $y=ax^3 +bx+c$, if b and c are both zero then the graph is

A. Symmetric w.r.t.y-axis
B. Symmetric w.r.t.x-axis
C. Straight Line
D. Circle

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126   Each complex cube root of unity is square of

A. itself
B. 1

#	Question	Options
	Each complex cube root of unity is square of	C. -1 D. the other
127	Question Image	A. Polynomial of degree 0 B. Polynomial of degree 1 C. Polynomial of degree 2 D. Polynomial of degree n
128	A polynomial of arbitrary degree	A. $f(x) = o$ B. $f(x) = x$ C. $f(x) = a$ D. $f(x) = ax + b, a \neq 0$
129	If a polynomial $P(x)$ is divided by $x - a$, then the remainder is	A. $P(o)$ B. $P(-a)$ C. $P(a)$ D. None of these
130	If one root of the equation $ix^2 - 2(i + 1) x + (2 - i) = 0$ is $2 - i$, then the other root is	A. -i B. 2 + i C. i D. 2 - i
131	If $x^3 + 4x^3 - 2x + 5$ is divided by $x - 1$, then the reminder is	A. 8 B. 6 C. 4 D. None of these
132	Roots of the equation $x^2 - 7x + 10 = 0$ are	A. {2, 5} B. {-2, 5} C. {2,5} D. {-2,-5}
133	Question Image	
134	Find a if 1 is a root of the equation $x^2 + ax + 2 = 0$	A. 3 B. -3 C. 2 D. 0
135	The equation $(\cos p - 1)x^2 + x (\cos p) + \sin p = 0$ in the variable x, has real roots, then p can take any value in the interval	A. $(0, \pi)$ B. $(-\pi, -0)$ C. $(0, \pi)$ D. None of these
136	In quadratic equation, if the replacement of y with -y leaves the equation unchanged, then the graph is	A. Straight line B. Circle C. Hyperbola D. Symmetric w.r.t.0
137	If w is a cube root of unity then $1 + w + w^2 =$ _____	A. 1 B. 2 C. 0 D. -1
138	Question Image	A. 0 B. $-1 - w^2$
139	The roots of $(b-c)x^2 + (c-a) x + a - b = 0$ are equal if	A. 2b = a+c B. 2a = b+c C. 2c = a+b D. a + b + c = 0
140	Question Image	A. Two real roots B. Two positive roots C. Two negative roots D. One positive and one negative root
141	$x^4 - 3x^3 + 3x + 1 = 0$ is called _____	A. Reciprocal equation B. Exponential equation C. Radical equation D. None of these

142	Roots of the equation $x^2 - x = 2$ are	A. {2, -1} B. {1, 0} C. {2, 1} D. {-2, 1}
143	The positive value of k for which the equation $x^2 + kx + 64 = 0$ has one of the roots 0	A. 4 B. 64 C. 8 D. All values of k
144	If the roots of $ax^2 + bx + c = 0$ (a > 0) be greater than unity, then	A. a + b + c = 0 B. a + b + c > 0 C. a + b + c < 0 D. None of these
145	The standard form of the quadratic function $f(x) = -x^2 + 4x + 2$, is	A. $(x-2)^2 + 6$ B. $-(x-2)^2 + 6$ C. $(x-3)^2 + 5$ D. $(x+4)^2 - 7$
146	Question Image	
147	Question Image	
148	If $x^2 + px + 1$ is a factor of $ax^3 + bx + c$, then	A. $a^2 + c^2 = -ab$ B. $a^2 - c^2 = -ab$ C. $a^2 - c^2 = ab$ D. None of these
149	Let the equation $ax^2 - bx + c = 0$ have distinct real roots both lying in the open interval (0, 1) where a, b, c are given to be positive integers. Then the value of the ordered triplet (a, b, c) can be	A. (5, 3, 1) B. (4, 3, 2) C. (5, 5, 1) D. (6, 4, 1)
150	The roots of the equation $ax^2 + bx + c = 0$ are real and equal if	A. $b^2 - 4ac < 0$ B. $b^2 - 4ac = 0$ C. $b^2 - 4ac > 0$ D. None of these
151	Question Image	A. 0 B. 1 C. 2 D. None of these
152	The graph of a quadratic function is	A. Circle B. Ellipse C. Parabola D. Hexagon
153	The solution of equation $x^2 + 2 = 0$ in the set of real number is	A. Infinite set B. Singleton set C. Null set D. None of these
154	If S and P are the sum and the product of roots of a quadratic equation, then the quadratic equation is	A. $x^2 + Sx - P = 0$ B. $x^2 - Sx + P = 0$ C. $x^2 - Sx - P = 0$ D. $X^2 + Sx + P = 0$
155	If the roots of $3x^2 + kx + 12 = 0$ are equal then k = _____	
156	The set of real roots of the equation $\log_{(5x+4)}(2x+3)^3 - \log_{(2x+3)}(10x^2 + 23x + 12) = 1$ is	A. {-1} B. {-3/5} C. Empty set D. {-1/3}
157	Question Image	
158	If $a(p + q)^2 + bpq + c = 0$ and $a(p + r)^2 + 2bpr + c = 0$, then qr equals	A. $p^2 + c/a$ B. $p^2 + a/c$ C. $p^2 + c/a$ D. $p^2 - c/a$
159	$w^{15} =$ _____	A. 0 B. 1 C. w D. w^2
160	The maximum value of the quadratic function $f(x) = -2x^2 + 20x$, is	A. 4 B. 3 C. 50 D. 7
161	Question Image	A. Polynomial of degree 0 B. Polynomial of degree 2

162	$w^{29} =$ _____	A. 0 B. 1 C. w D. w^2
163	If a,β are the roots of $ax^2+bx+c=0$, the equation whose roots are doubled is	A. $ay^2 +2by+c=0$ B. $ay^2+2by+4c=0$ C. $ay^2+2by+c=0$ D. $ay^2+by+4c=0$
164	The graph of the quadratic equation is	A. Straight line B. Circle C. Parabola D. elipse
165	Question Image	A. Only one real solution B. Exactly three real solution C. Exactly one rational solution D. Non-real roots
166	The standard parabolic form of the equation $f(x) = x^2 +4 x +1$ is	A. $x(x+4)+1$ B. $(x+2)^2-3$ C. $(x+4)^3 + 9$ D. $x(x-2)^2+1$
167	The roots of the equation $x^2 +6x-7=0$, are	A. 1 B. 2 C. 1 and -7 D. -7
168	If a,β are the roots of the equation $x^2 - 8x + p = 0$ and $a^2 + β^2= 40$, then value of p is	A. 8 B. 12 C. 10 D. 14
169	Both the roots of the equation $(x -b) (x - c) + (x -c) (x-a) +(x-a) (x-b) = 0$ are always	A. Positive B. Negative C. Real D. None of these
170	Question Image	A. n if n is even B. 0 for any natural number n C. 1 if in odd D. None of these
171	The synthetic division method is only used to divide a polynomial by	A. quadratic equation B. binomial C. linear equation D. monomial
172	If a,β are the roots of the equation $x^2 + kx +12 = 0$ such that $a - β = 1$, the value of k is	A. 0 B. ±1 C. ±5 D. ±7
173	If a polynomial p(x) is divided by x-c, then the remainder is	A. p(x) B. x-c C. c D. P(c)