

(EMC01-0001E)

- If  $(x - a)$  is a factor of the polynomial  $x^6 - ax^5 + x^4 - ax^3 + 3x + a - 2$ , then the value of  $a$  is
  - A) 1
  - B)  $\frac{1}{2}$
  - C)  $\frac{1}{3}$
  - D) 2

(EMC01-0003M)

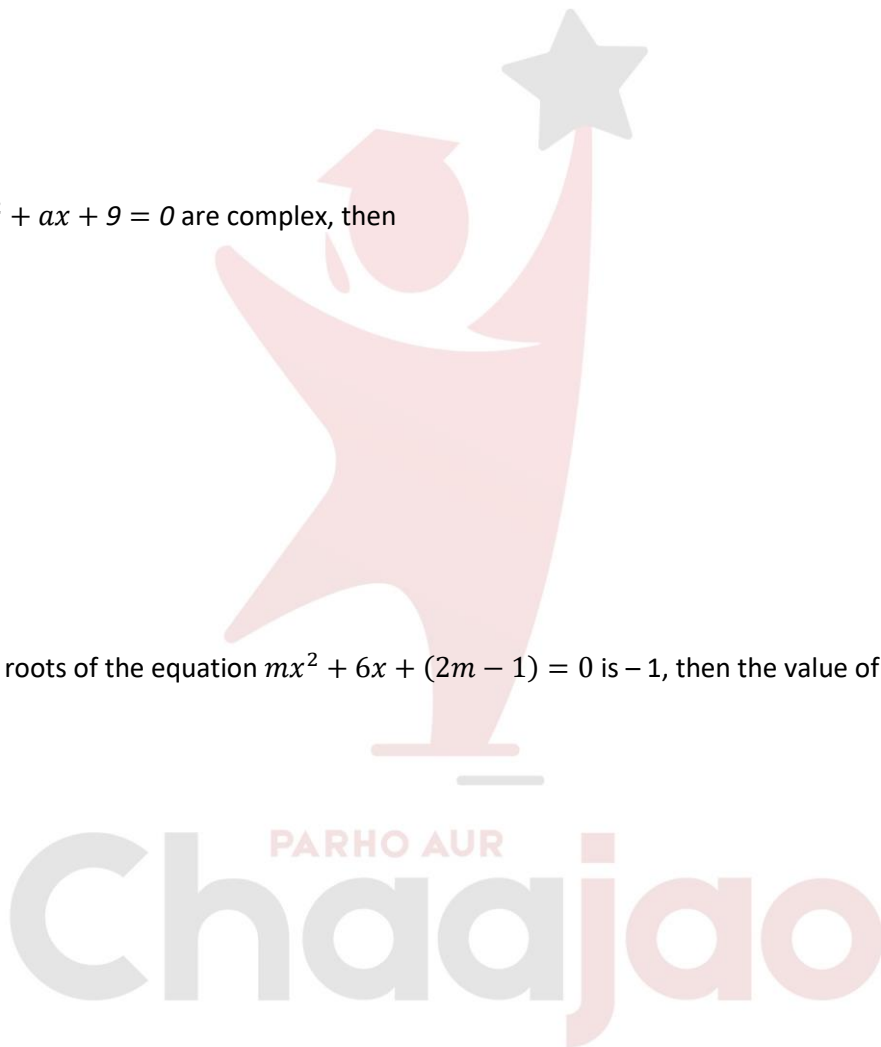
- If the roots of  $x^2 + ax + 9 = 0$  are complex, then
  - A)  $a < -6$
  - B)  $a < 6$
  - C)  $|a| < 6$
  - D)  $|a| > 6$

(EMC01-0005E)

- If the product of roots of the equation  $mx^2 + 6x + (2m - 1) = 0$  is  $-1$ , then the value of  $m$  is
  - A) -1
  - B)  $-\frac{1}{3}$
  - C)  $\frac{1}{3}$
  - D) 1

(EMC01-0007M)

- One root of the equation  $5x^2 + 13x + m = 0$  is reciprocal of the other if  $m$  equals
  - A) 0
  - B) 5
  - C)  $\frac{1}{6}$
  - D) 6



(EMC01-0009E)

- If  $\alpha$  and  $\beta$  are the roots of  $4x^2 + 3x + 7 = 0$ , then the value of  $\frac{1}{\alpha} + \frac{1}{\beta}$  is
  - A)  $-\frac{3}{7}$
  - B)  $-\frac{3}{4}$
  - C)  $\frac{3}{7}$
  - D)  $\frac{4}{7}$

(EMC01-0011H)

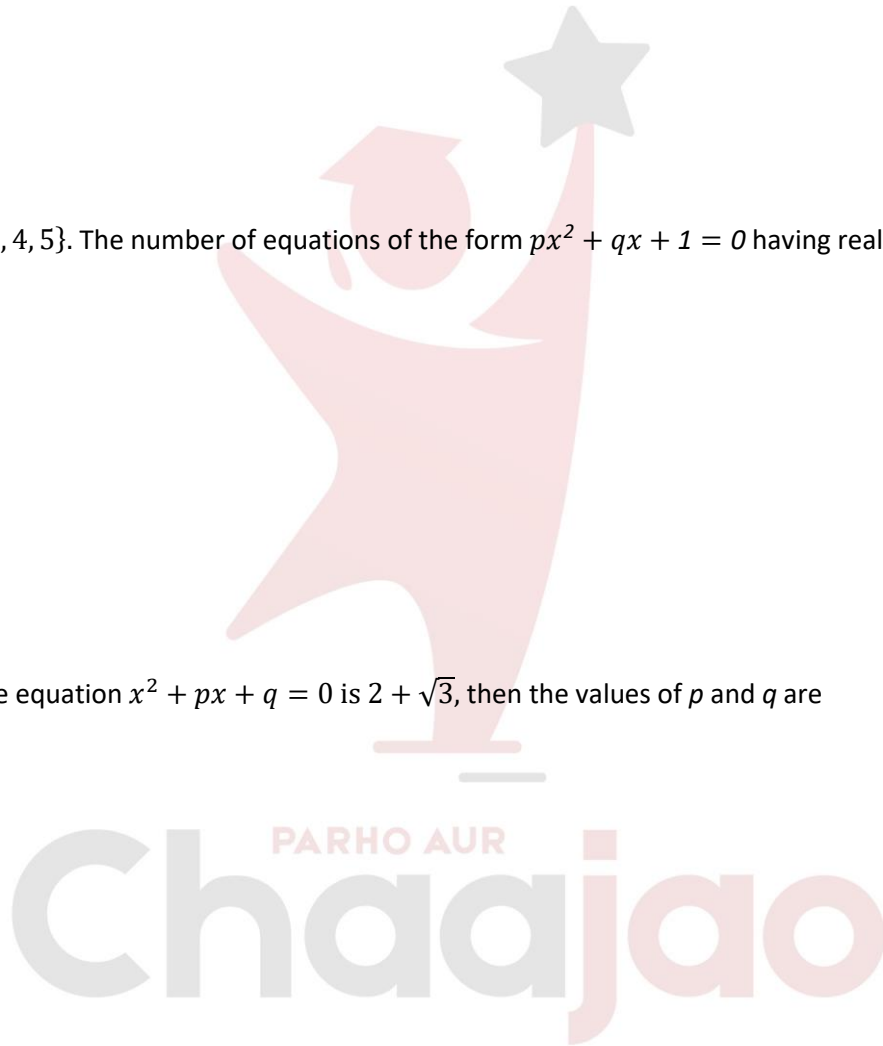
- Let  $p, q \in \{1, 2, 3, 4, 5\}$ . The number of equations of the form  $px^2 + qx + 1 = 0$  having real roots, is
  - A) 7
  - B) 8
  - C) 9
  - D) 12

(EMC01-0013M)

- If one root of the equation  $x^2 + px + q = 0$  is  $2 + \sqrt{3}$ , then the values of  $p$  and  $q$  are
  - A)  $-2, -\sqrt{3}$
  - B)  $-4, 1$
  - C)  $2, \sqrt{3}$
  - D)  $4, -1$

(EMC01-0015M)

- If  $(1 - p)$  is a root of the quadratic equation  $x^2 + px + (1 - p) = 0$ , then its roots are
  - A)  $-1, 2$
  - B)  $-1, 0$
  - C)  $-1, 1$
  - D)  $0, 1$



**(EMC01-0017M)**

- The solution set of  $\sqrt{2x - 6} + \sqrt{x + 4} = 5$  is
  - A) {5}
  - B) {0, 5}
  - C) {1, 3}
  - D) {3, 5}

**(EMC01-0019M)**

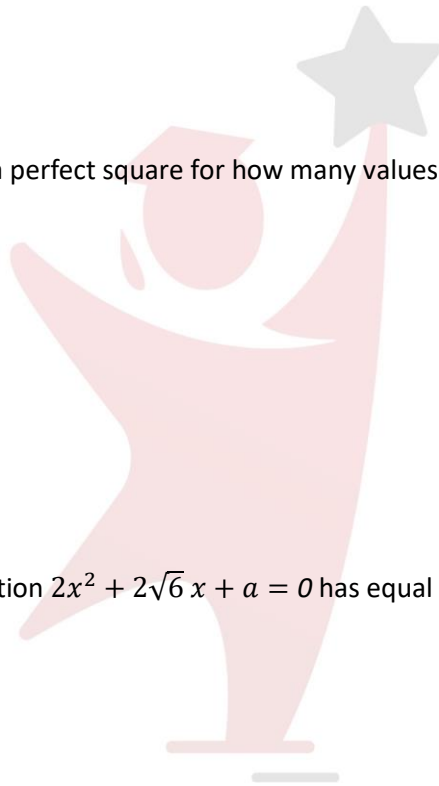
- $x^2 + x + 1 + 2k(x^2 - x - 1)$  is a perfect square for how many values of  $k$  ?
  - A) 0
  - B) 1
  - C) 2
  - D) 3

**(EMC01-0021E)**

- The value of  $a$  for which the equation  $2x^2 + 2\sqrt{6}x + a = 0$  has equal roots, is
  - A)  $\sqrt{2}$
  - B)  $\sqrt{3}$
  - C) 2
  - D) 3

**(EMC01-0023H)**

- One root of  $mx^2 - 14x + 8 = 0$  is 6 times the other root. Then  $m$  is equal to
  - A) 1
  - B) 2
  - C) 3
  - D) None of these



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**(EMC01-0025M)**

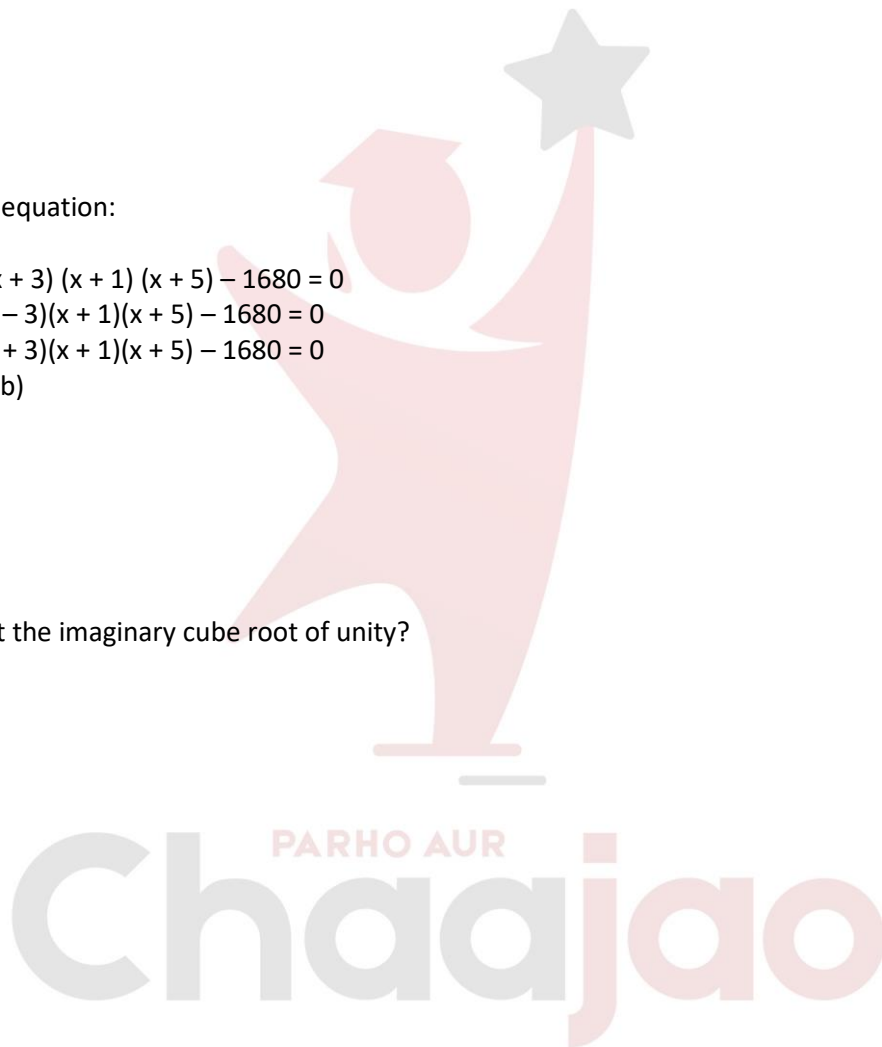
- If  $\{\alpha, \beta\}$  is the solution set of  $2x^2 - 3x + 5 = 0$ , then the equation with solution set  $\{\alpha^2 + 1, \beta^2 + 1\}$  is
  - A)  $4x^2 - 3x - 18 = 0$
  - B)  $4x^2 - 3x + 18 = 0$
  - C)  $4x^2 - 3x + 18 = 0$
  - D)  $4x^2 + 3x + 18 = 0$

**(EMC01-0027E)**

- $x = 9$  is a root of equation:
  - A)  $(x - 7)(x + 3)(x + 1)(x + 5) - 1680 = 0$
  - B)  $(x - 7)(x - 3)(x + 1)(x + 5) - 1680 = 0$
  - C)  $(x + 7)(x + 3)(x + 1)(x + 5) - 1680 = 0$
  - D) (a) and (b)

**(EMC01-0029E)**

- Which one is not the imaginary cube root of unity?
  - A) 1
  - B)  $\frac{-1 + \sqrt{3}i}{2}$
  - C)  $\frac{-1 - \sqrt{3}i}{2}$
  - D) All of these



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

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