(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 α and β 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

(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**