**(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

**(EMC01-0002M)**

- The geometric mean of the roots of the equation $x^2 - 18x + 9 = 0$ is

  A) 3
  B) $3\sqrt{2}$
  C) 9
  D) $9\sqrt{2}$

**(EMC01-0003M)**

- If the roots of $x^2 + ax + 9 = 0$ are complex, then

  A) $a < -6$
  B) $a < 6$
  C) $|a| < 6$
  D) $|a| > 6$

**(EMC01-0004M)**

- The value of $k$ for which the quadratic equation $x^2 - 2x(1 + 3k) + 7(2k + 3) = 0$ has equal roots, is

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

0349-7869821

**(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) $\frac{1}{3}$
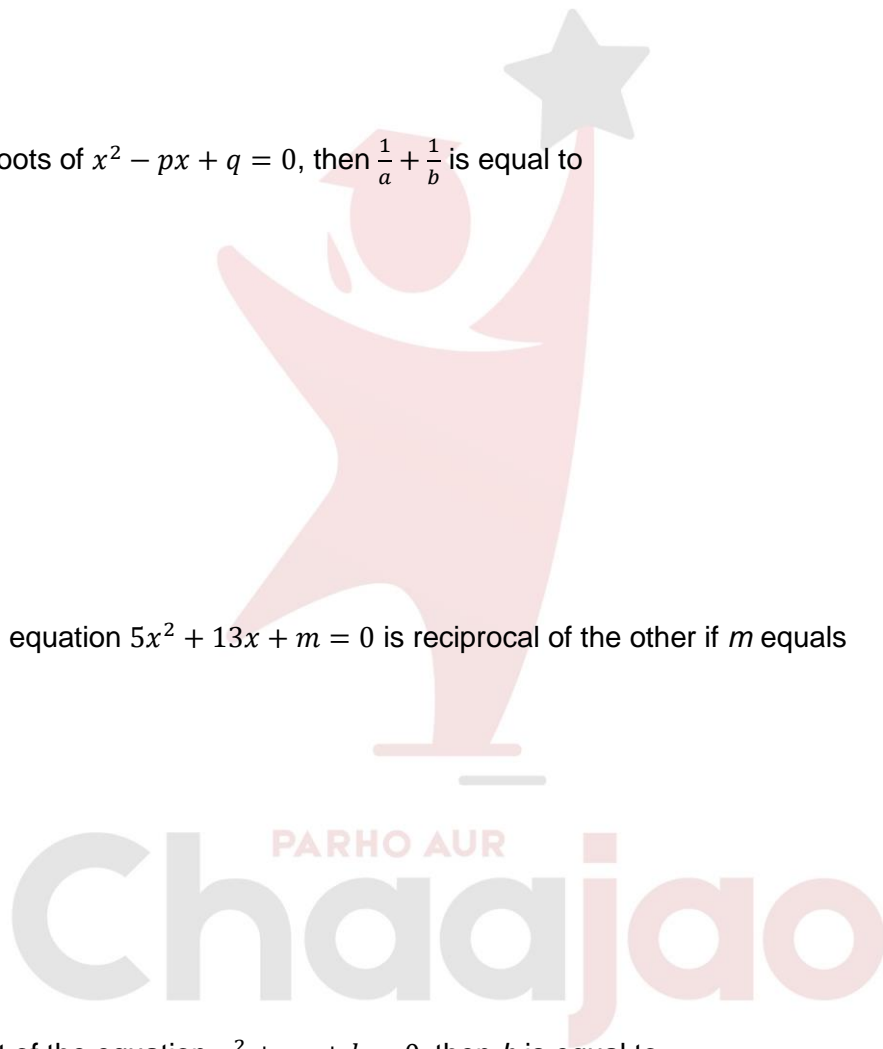    D) 1

**(EMC01-0006E)**

- If $a$ and $b$ are roots of $x^2 - px + q = 0$, then $\frac{1}{a} + \frac{1}{b}$ is equal to

    A) $\frac{-p}{q}$
    B) $\frac{1}{2p}$
    C) $\frac{-1}{q}$
    D) $\frac{P}{q}$

**(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

**(EMC01-0008M)**

- If $1 - i$ is a root of the equation $x^2 + ax + b = 0$, then $b$ is equal to

    A) $-2$
    B) $-1$
    C) 1
    D) 2

**(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) $\frac{4}{7}$

**(EMC01-0010H)**

- If α and β are the roots of the equation $x^2 + 2x + 4 = 0$, then $\frac{1}{\alpha^3} + \frac{1}{\beta^3}$ is equal to

  A) $-\frac{1}{2}$
  B) $\frac{1}{2}$
  C) $\frac{1}{4}$
  D) $\frac{1}{6}$

**(EMC01-0011H)**
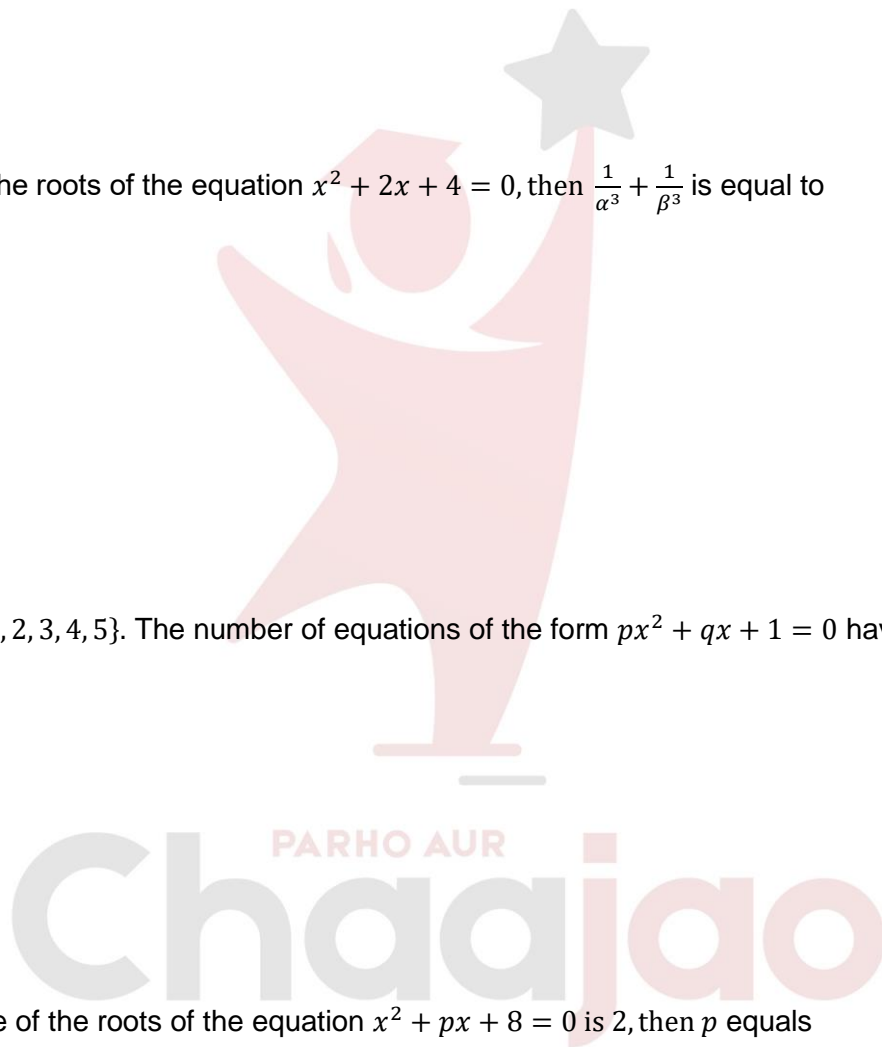
- Let $p, q \in \{1, 2, 3, 4, 5\}$. The number of equations of the form $px^2 + qx + 1 = 0$ having real roots, is

  A) 7
  B) 8
  C) 9
  D) 12

**(EMC01-0012M)**

- If the difference of the roots of the equation $x^2 + px + 8 = 0$ is 2, then $p$ equals

  A) $\pm 2$
  B) $-6, 2$
  C) $-2, 6$
  D) $\pm 6$

**0349-7869821**

GET IT ON Google Play    Coming Soon App Store    ONLINE.CHAAJAO.COM

**(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
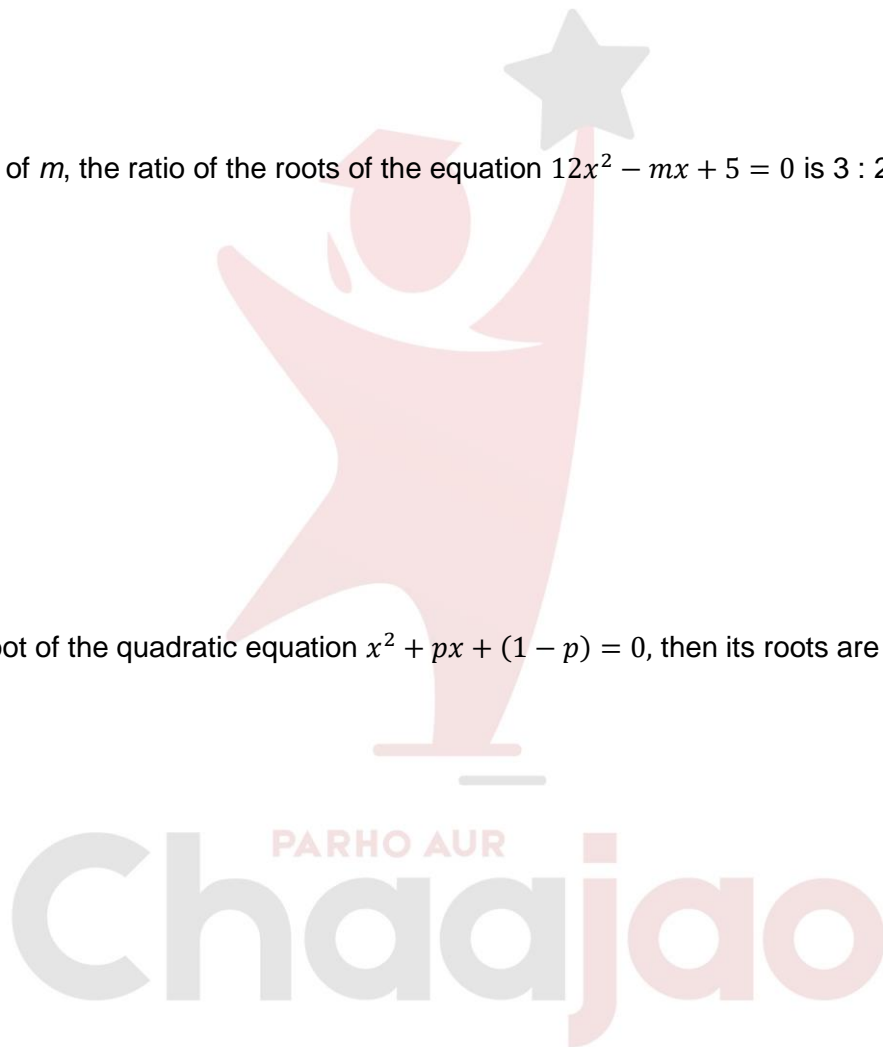   C) $2, \sqrt{3}$
   D) 4, - 1

**(EMC01-0014M)**

- For what value of $m$, the ratio of the roots of the equation $12x^2 - mx + 5 = 0$ is 3 : 2?

   A) $5\sqrt{10}$
   B) $10\sqrt{5}$
   C) $25\sqrt{2}$
   D) $15\sqrt{5}$

**(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

**(EMC01-0016H)**

- The roots of equation $2^{2x} - 10 \cdot 2^x + 16 = 0$ are

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

**(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}

**(EMC01-0018E)**

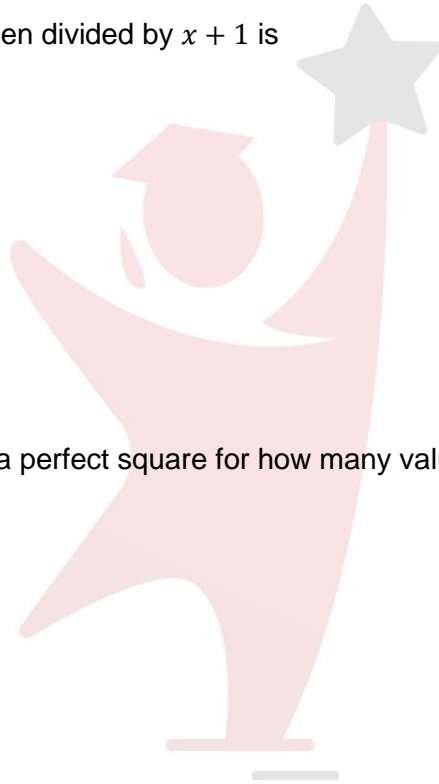- Remainder of $x^{64} + x^{27} + 1$ when divided by $x + 1$ is

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

**(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

**(EMC01-0020E)**

- Both the roots of the equation $x^2 - x - 3 = 0$ are

  A) real and rational
  B) real and irrational
  C) real and equal
  D) imaginary roots

0349-7869821

GET IT ON Google Play · Coming Soon App Store · ONLINE.CHAAJAO.COM

**(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

**(EMC01-0022M)**

- If one root of equation $x^2 + ax + 12 = 0$ is 4 while the equation $x^2 + ax + b = 0$ has equal roots, then the value of b is

   A)  $\frac{4}{7}$
   B)  $\frac{7}{4}$
   C)  $\frac{4}{49}$
   D)  $\frac{49}{4}$

**(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

**(EMC01-0024M)**

- If $\alpha + \beta = 4$ and $\alpha^3 + \beta^3 = 44,$ then $\alpha, \beta$ are the roots of the equation

   A)  $2x^2 - 7x + 6 = 0$
   B)  $3x^2 - 12x + 5 = 0$
   C)  $4x^2 + 22x + 15 = 0$
   D)  $9x^2 - 27x + 20 = 0$

**(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) $4x^2 + 3x + 18 = 0$

| Answers Key | |
|:---:|:---:|
| 1 | B |
| 2 | A |
| 3 | C |
| 4 | B |
| 5 | C |
| 6 | D |
| 7 | B |
| 8 | D |
| 9 | A |
| 10 | C |
| 11 | D |
| 12 | D |
| 13 | B |
| 14 | A |
| 15 | B |
| 16 | A |
| 17 | A |
| 18 | B |
| 19 | C |
| 20 | B |
| 21 | D |
| 22 | D |
| 23 | C |
| 24 | B |
| 25 | D |

0349-7869821

ONLINE.CHAAJAO.COM