

(EMC01-0026E)

- $x = \frac{-b - \sqrt{b^2 - 4ac}}{-2a}$  is one of the root of:
  - A)  $ax^2 - bx + c = 0$
  - B)  $-ax^2 - bx - c = 0$
  - C)  $ax^2 - bx - c = 0$
  - D)  $-ax^2 + bx - c = 0$

(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)

(EMC01-0028E)

- An equation, which remains unchanged when  $x$  is replace by  $\frac{1}{x}$  is:
  - A) Exponential equation
  - B) Reciprocal equation
  - C) Linear equation
  - 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

(EMC01-0030M)

- If  $\frac{n}{3}$  is an integer, then  $\omega^{n^3} + \omega^{3^n} =$ 
  - 1
  - $\omega$
  - $\omega^2$
  - 2

(EMC01-0031E)

- If  $x^n + a^n$  is divided by  $x + a$ , then remainder will be:
  - 0
  - $2a^n$
  - $a^n$
  - (a)or(b)

(EMC01-0032M)

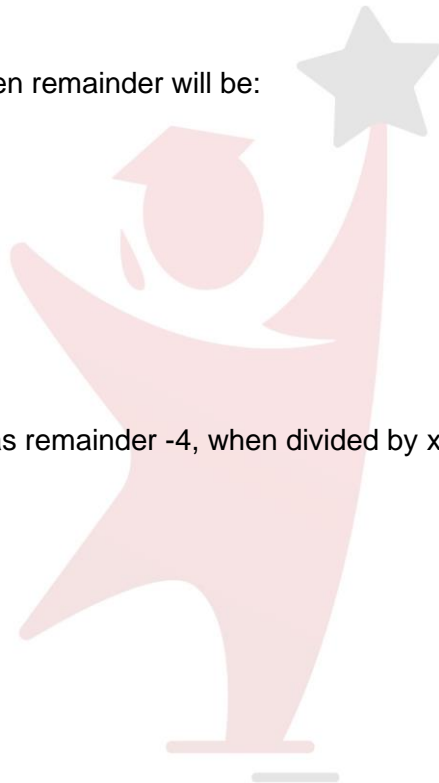
- Polynomial  $x^3 + kx^2 - 7x + 6$  has remainder -4, when divided by  $x + 2$ , if  $k =$ 
  - 4
  - 4
  - 0
  - 2

(EMC01-0033E)

- Roots of equation  $2x^2 - 7x + 3 = 0$  will be:
  - Rational
  - Irrational
  - Imaginary
  - Equal

(EMC01-0034E)

- The nature of the roots of  $4x^2 - 7x - 2 = 0$ 
  - Rational
  - Irrational
  - Complex
  - Equal



PARHO AUR  
**Chaaajao**

(EMC01-0035M)

- The middle term to make the expression  $x^2 + 16/25$  a perfect square is
  - $\pm \frac{8x}{5}$
  - $\pm \frac{1}{5}x$
  - $\frac{8}{5}$
  - $\pm 8x$

(EMC01-0036H)

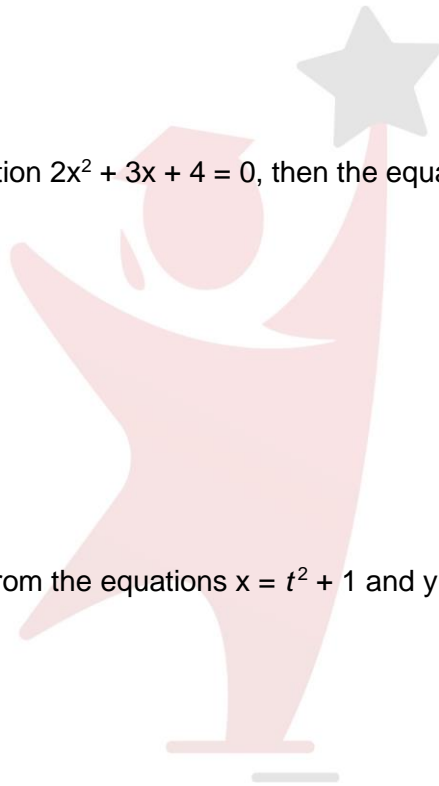
- If  $\alpha, \beta$  are the roots of the equation  $2x^2 + 3x + 4 = 0$ , then the equation whose roots are  $\alpha/\beta$  and  $\beta/\alpha$  is
  - $8x^2 + 7x + 8 = 0$
  - $8x^2 + 6x + 8 = 0$
  - $8x^2 + 5x + 8 = 0$
  - $8x^2 + 4x + 8 = 0$

(EMC01-0037E)

- If the parameter is eliminated from the equations  $x = t^2 + 1$  and  $y = 2t$ , then the relation between  $x$  and  $y$  is
  - $y^2 = 4x - 4$
  - $y = 1 - x$
  - $y^2 = x - 1$
  - $y^2 = (x - 1)^2$

(EMC01-0038H)

- Two quadratic equations in which  $xy$  term is missing and the coefficients of  $x^2$  and  $y^2$  are equal, give a linear equation by .....
  - Addition
  - subtraction
  - multiplication
  - division



PARHO AUR  
**ChaaJao**

(EMC01-0039M)

- If  $\alpha, \beta$  are roots of  $2x^2 - 4x + 5 = 0$  then  $(\alpha + 1)(\beta + 1) = \dots\dots\dots$
- A)  $\frac{11}{2}$   
 B)  $-\frac{11}{2}$   
 C)  $\frac{2}{11}$   
 D)  $-\frac{2}{11}$

(EMC01-0040M)

- If  $\omega$  is complex cube root of unity then  $\omega^{29} + \omega^{28} + 1 = \dots\dots\dots$
- A) 0  
 B) 1  
 C) 2  
 D) 3

(EMC01-0041E)

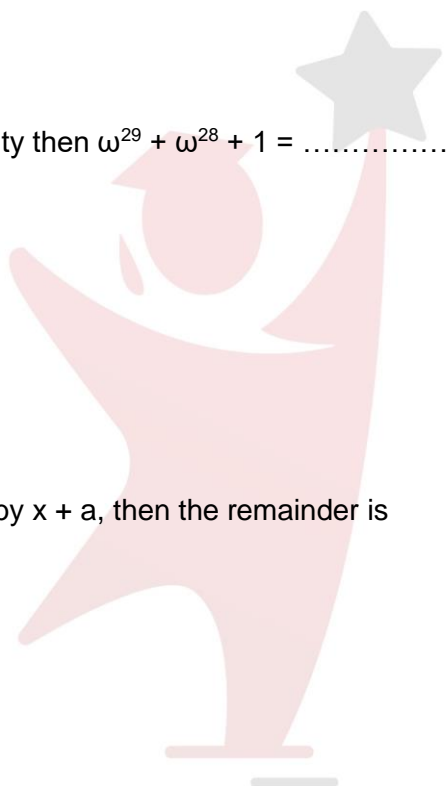
- If  $x^3 + ax^2 - a^2x - a^3$  is divided by  $x + a$ , then the remainder is
- A)  $-a^3$   
 B)  $a^3$   
 C)  $2a^3$   
 D) 0

(EMC01-0042M)

- Which of the following is a factor of  $x^3 - 3x^2 + 2x - 6$
- A)  $x + 2$   
 B)  $x + 3$   
 C)  $x - 3$   
 D)  $x - 4$

(EMC01-0043E)

- Find  $a$  if 1 is a root of the equation  $x^2 + ax + 2 = 0$
- A) 3  
 B) -3  
 C) 2  
 D) 0



PARHO AUR  
**Chhajjao**

(EMC01-0044E)

- The product of the four fourth roots of unity is
  - 0
  - 1
  - 1
  - $i$

(EMC01-0045E)

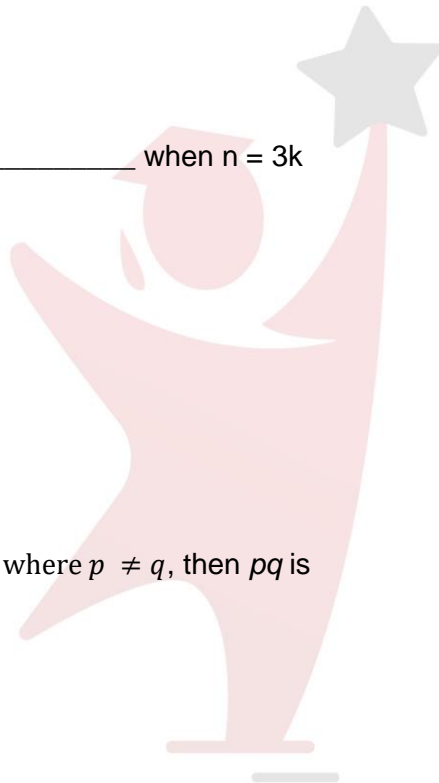
- For any integer  $k$ ,  $w^n$  \_\_\_\_\_ when  $n = 3k$ 
  - 1
  - 2
  - 0
  - 4

(EMC01-0046E)

- $3p^2 = 5p + 2$  and  $3q^2 = 5q + 2$  where  $p \neq q$ , then  $pq$  is
  - $-\frac{3}{2}$
  - $-\frac{2}{3}$
  - $\frac{2}{3}$
  - $\frac{3}{2}$

(EMC01-0047M)

- let  $a > 0$ ,  $b > 0$  and  $c < 0$ . Then, both the roots of the equation  $ax^2 + bx + c = 0$ 
  - are rational numbers
  - are real and negative
  - have negative real parts
  - are real and positive



PARHO AUR  
**Chaaajao**

(EMC01-NE-NQ-02)

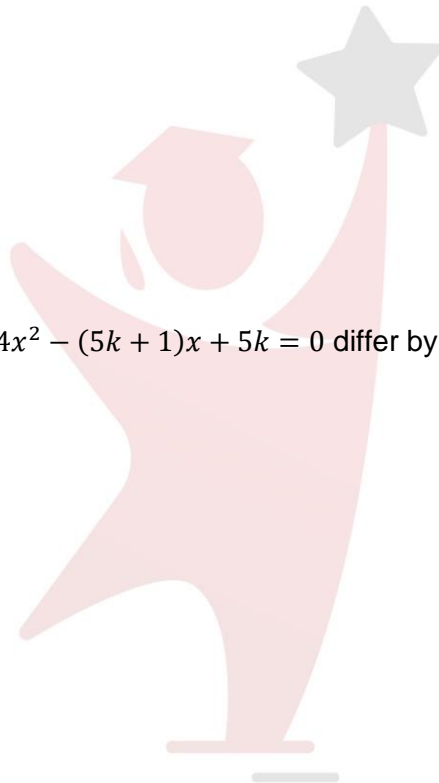
- Let  $\alpha$  and  $\beta$  ( $\alpha > \beta$ ) be the roots of the equation  $x^2 - 8x + q = -0$ . If  $\alpha^2 - \beta^2$  then what is the value of  $q$ ?  
A) -15  
B) -10  
C) 10  
D) 15

(EMC01-NE-NQ-03)

- If the roots of the equation  $4x^2 - (5k + 1)x + 5k = 0$  differ by unity, then which one of the following is a possible value of  $k$ ?  
A) -3  
B) -1  
C)  $-\frac{1}{5}$   
D)  $-\frac{3}{5}$

(EMC01-NE-NQ-04)

- If  $k$  is one of the roots of the equation  $x(x + 1) + 1 = 0$  then what is the other root?  
A) 1  
B)  $-k$   
C)  $k^2$   
D)  $-k^2$



PARHO AUR  
Chaaajao

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