

1. Factorise the following : $9x^2 + 6x + 1 - 25y^2$
 2. Factorise the following : $a^2 + b^2 + 2ab + 2bc + 2ca$
 3. Show that $p(x) = x^3 - 3x^2 + 2x - 6$ has only one zero
 4. Find the value of a if $x + 6$ is a factor of $x^3 + 3x^2 + 4x + a$
 5. If polynomials $ax^3 + 3x^2 - 3$ and $2x^3 - 5x + a$ leave the same remainder when each is divided by $x - 4$, find the value of a
 6. Find the integral zeroes of the polynomial $2x^3 + 5x^2 - 5x - 2$
 7. If $(x - 3)$ and $\left(x - \frac{1}{3}\right)$ are both factors of $ax^2 + 5x + b$, then show that $a = b$
 8. Find the value of $x^3 + y^3 + 15xy - 125$ if $x + y = 5$
 9. Without actually calculating, find the value of $(25)^3 - (75)^3 + (50)^3$
 10. If the polynomials $ax^3 + 3x^2 - 3$ and $2x^3 - 5x + a$, when divided by $(x - 4)$ each leave remainders m and n respectively and $m + n = 0$, find the value of a .
11. If $x^3 + 1/x^3 = 2$ find $(x + 1/x)$
12. Factorize : (i) $x^4 + x^2 + 1$ (ii) $x^4 + 4$
13. factorize : $6 - x - 2x^2$
14. Find the remainder when $x^3 - ax^2 + 6x - a$ is divided by $x - a$.