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Worksheet: Polynomials

1. Find a quadratic polynomial, the sum and product of whose zeroes are √2 and -3/2, respectively. Also find its zeroes.
2. Find the quadratic polynomial if its zeroes are 0 and √5.
3. Give an example of a monomial and a binomial having degrees of 82 and 99, respectively.
4. Evaluate (102)^3 using a suitable identity.
5. Find the value of $x^3 + y^3 + z^3 – 3xyz$ if $x^2 + y^2 + z^2 = 83$ and $x + y + z = 15$
6. Find the zeroes of the polynomial 4x^2 – 4x – 8. Also, establish a relationship between the zeroes and coefficients.
7. Find the value of x^3 + y^3 + z^3 – 3xyz if x + y + z = 15 and x^2 + y^2 + z^2 = 83
8. Find the value of "p" from the polynomial $x^2 + 3x + p$, if one of the zeroes of the polynomial is 2.
9. Factorise $64m^3 – 343n^3$
10. Calculate the perimeter of a rectangle whose area is 25x^2 - 35x + 12
11. Without actual division, prove that 2x^4 – 5x^3 + 2x^2 – x + 2 is divisible by x^2 – 3x + 2.
12. Find a quadratic polynomial whose zeroes are 5 and –3.
13. If $(x – 1/x) = 4$, then evaluate $(x^2 + 1/x^2)$ and (x■ + 1/x■).
14. If x + y = 12 and xy = 32, Find the value of $x^2 + y^2$
15. If one zero of the polynomial $(a^2 + 9)x^2 + 13x + 6a$ is the reciprocal of the other, find the value of a.
16. Find the product: $(x – 3y) (x + 3y) (x^2 + 9y^2)$
17. The value of 5.63 × 5.63 + 11.26 × 2.37 + 2.37 × 2.37 is
18. Find the value of $9x^2 + 4y^2$ if xy = 6 and 3x + 2y = 12.
19. Using a suitable identity, determine the value of $(17)^3 + (-12)^3 + (-5)^3$
20. Factorise $8a^3 + b^3 + 12a^2b + 6ab^2$