

Worksheet: Polynomials

Uttar Pradesh State Board · Class 9 · Mathematics · 18 questions · 43 marks

Name: _____

Date: _____

Score: _____ / 43

Q1. Which of the following is a polynomial: (a) $x + 3$, (b) $1/x + 5$, (c) $2x^3 - 7x + 4$, (d) $\sin(x) + 1$? [1 mark]

Q2. Find the degree of the polynomial $4x^2 - 7x^2 + 6$. [1 mark]

Q3. Find $p(3)$ if $p(x) = 2x^2 - 5x + 1$. [1 mark]

Q4. Is $x = 2$ a zero of $p(x) = x^3 + 2x^2 - 5x - 6$? [1 mark]

Q5. Expand $(3x + 4)^2$ using an identity. [1 mark]

Q6. Without computing, find 102×98 using an identity. [1 mark]

Q7. Find the remainder when $p(x) = x^3 + 3x^2 - 5x + 7$ is divided by $(x - 2)$. [2 marks]

Q8. Find the remainder when $p(x) = 3x^3 - 2x^2 + 4x - 1$ is divided by $(3x - 1)$. [2 marks]

Q9. Determine whether $(x + 1)$ is a factor of $p(x) = x^3 - 2x + 2$. [2 marks]

Q10. Factorise $6x^2 + 11x - 10$ by splitting the middle term. [3 marks]

Q11. Factorise $25x^2 - 49y^2$ using an identity. [2 marks]

Q12. Factorise $8x^3 + 27$. [3 marks]

Q13. Expand $(2x - 3y)^3$. [3 marks]

Q14. Factorise $x^3 - 6x^2 + 11x - 6$ completely. [4 marks]

Q15. If $a + b + c = 0$, find the value of $a^3 + b^3 + c^3 - 3abc$. [4 marks]

Q16. If $a + b = 5$ and $ab = 6$, find $a^3 + b^3$ without solving for a, b . [4 marks]

Q17. If $(x - 2)$ and $(x + 1)$ are both factors of $p(x) = x^3 + ax^2 + bx - 6$, find a and b . [4 marks]

Q18. Find all integer zeros of $p(x) = x^2 - 5x + 4$. [4 marks]
