Worksheet: Polynomials

NIOS · 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) 2x³ 7x + 4, (d) sin(x) + 1? *[1 mark]*

Q2. Find the degree of the polynomial 4xu7x² + 6. *[1 mark]*

Q3. Find p(3) if p(x) = 2x² 5x + 1. *[1 mark]*

Q4. Is x = 2 a zero of p(x) = x³ + 2x² 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) = x³ + 3x² 5x + 7 is divided by (x 2). *[2 marks]*

Q8. Find the remainder when p(x) = 3x³ 2x² + 4x 1 is divided by (3x 1). *[2 marks]*

Q9. Determine whether (x + 1) is a factor of p(x) = xt x³ 2x + 2. *[2 marks]*

Q10. Factorise 6x² + 11x 10 by splitting the middle term. *[3 marks]*

Q11. Factorise 25x² 49y² using an identity. *[2 marks]*

Q12. Factorise 8x³ + 27. *[3 marks]*

Q13. Expand (2x 3y)³. *[3 marks]*

Q14. Factorise x³ 6x² + 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 $p(x) = x^3 - 5x^2 + 4$. *[4 marks]*