

Unit 2: Polynomial Solving Test

Factor and Solve each of the following polynomials

1. $x^2 + 8x + 12 = 0$

2. $3x^2 - 9x + 6 = 0$

3. $2x^2 + 7x + 1 = 0$

4. $16x^2 - 25 = 0$

5. $16x^2 + 25 = 0$

Add or subtract the following polynomials.

5. $(3x^3 + 5x^2 + x - 5) + (2x^2 - x + 1)$

6. $(5x^2 + 2x - 10) - (5x + 2)$

Multiply the following polynomials

7. $(x + 4)(3x - 7)$

8. $(2 + 3i)(5 - 4i)$

Expanding polynomials

9. State the 6th row of the Pascal's Triangle

10. $(x + 2)^5$

Divide the following polynomials

11. $(7x^3 - 6x^2 - 8x + 7) \div (x - 1)$ answer is $(7x^2 + x - 7)$

12. $(x^3 + 12x^2 + 26x + 85) \div (x + 9)$ answer is $(x^2 + 3x + 9 + \frac{4}{x+9})$

Find the possible rational roots ($\pm \frac{p}{q}$)

13. $f(x) = x^4 + 5x^2 - 6$

14. $f(x) = 4x^3 + 5x^2 + 10$

Find the roots. (solve for x)

15. $f(x) = x^4 + 2x^3 - x^2 + 4x - 6$ answer is $(x^2 + 2)(x - 1)(x + 3)$