

Mathematical Induction and Proof of Recursion

10/10/2020

Prove Algebra 2 Math Exam Review (2018-2019)

Section 1.1.1.1 - 1.1.1.2

Section 1.1.1.1

1. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$
2. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$
3. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$
4. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$
5. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$
6. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$
7. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$
8. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$

Section 1.1.2

9. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$
10. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$

Section 1.2

11. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$
12. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$

Section 1.3

13. $(x^2 + 2x + 1)(x^2 - 2x + 1) = (x^2 + 1)^2 - (2x)^2 = x^4 + 2x^2 + 1 - 4x^2 = x^4 - 2x^2 + 1$

Year	Score
2018	85
2019	80
2020	75
2021	70
2022	65

Linear: $y = -5x + 90$
 Quadratic: $y = -x^2 + 20x - 10$
 Cubic: $y = -x^3 + 15x^2 - 35x + 25$

Year	Score
2018	85
2019	80
2020	75
2021	70
2022	65

Linear: $y = -5x + 90$
 Quadratic: $y = -x^2 + 20x - 10$
 Cubic: $y = -x^3 + 15x^2 - 35x + 25$

14. Prove the sum of 10 terms: $\sum_{k=1}^{10} k = 55$

15. Prove the sum of 10 terms: $\sum_{k=1}^{10} k^2 = 385$