

12.1 ~ Adding & Subtracting Polynomials

Past due on _____ Period _____

Write each polynomial in standard form. Classify the polynomial by its number of terms - monomial, binomial, or trinomial. State the degree of the polynomial. (If necessary, refer to the 12.1 example "Identifying Characteristics of Polynomial Expressions" in the Chapter 12 Summary.)

1) $5n - 8 + 3n^2$

2) $-2x^6$

3) $4x^2 + 2x + 10x^3$

4) $8 - 5x$

5) $-7b^2 + 8b$

6) 6

Simplify each expression. (If necessary, refer to the 12.1 example "Adding & Subtracting Polynomial Expressions" in the Chapter 12 Summary.)

7) $(8 + 5x) + (8x^4 - 10x)$

8) $(3x^2 - 7x) - (7x^4 + 4x)$

9) $(2v - 8v^4) - (v^4 + 7v^3)$

10) $(6x^4 + 4x^2) + (4x^2 - 10x^4)$

11) $(3 - 4n - n^3) - (5 - 9n^3)$

12) $(8k^4 + 8k^2 - k) + (k - 3k^2)$

13) $(10m^3 - 9 - 3m^2) - (8m^2 + 6m^3 + 2m)$

14) $(8 + 8n^3 + 6n^2) - (3n^2 + 6 + 3n^3)$

Use the distributive property and write the quadratic function in standard form. (If necessary, refer to the 11.1 example "Writing Quadratic Functions in Standard Form" in the Chapter 11 Summary.)

15) $-5v + 7v(v - 1) + 2$

16) $3 - n + 2n(1 - 6n)$

17) $5x^2 + 6x(x + 8) - 5$

18) $9k(1 - 7k) - 9k^2$

Use a graphing calculator to determine the x -intercepts of the function. Then, write the function in factored form. (If necessary, refer to the 11.4 example "Writing a Quadratic Function in Factored Form Given its x -intercepts" in the Chapter 11 Summary.)

19) $f(x) = x^2 - 17x + 66$

20) $f(x) = -2x^2 + 4x + 240$

21) $f(x) = 7x^2 + 84x + 77$

22) $f(x) = 3x^2 - 12x - 135$

Use a graphing calculator to determine the vertex of the quadratic function given in standard form. Then, rewrite the function in vertex form. (If necessary, refer to the 11.6 example "Identifying the Vertex of a Quadratic Function in Vertex Form" in the Chapter 11 Summary.)

23) $f(x) = -x^2 + 8x - 15$

24) $f(x) = 2x^2 - 16x + 34$

25) $f(x) = -3x^2 - 18x - 28$

26) $f(x) = \frac{1}{2}x^2 - 2x + 3$