Honors Math II Name_____

Ch. 2 day 1 WS: Polynomials Period_____ Date_____

Decide whether the function is a polynomial function. If it is, write the function in standard form and state the degree, type, and leading coefficient.

1. $f(x) = 5x + 2$

2. $f(x) = 2^x$

3. $g(x) = 15 + 3x^2 + x$

4. $h(x) = \frac{1}{2}x^4 - x^2 + 3x^3$

5. $h(x) = x^4 - x^{-3}$

6. $f(x) = -\frac{3}{4}x^3 + 2x^4 + 7$

Find the sum or difference or fill in the $\square$ with the missing information.

7. $(2y^2 + \square\, y + 1) + (y^2 - y - 4) = \square\, y^2 - 6y - 3$

8. $(12x^2 + 8x - 3) - (11x^2 - x + 5) =$

9. $(6m^3 + \square) - (\square\, m^2 + 4m^4 - 9m - 2) = -4m^4 + \square\, m^3 - m^2 + \square\, m - 3$

10. $(5x^4 - 2x^3 + 9) - (\square\, x^4 + 8x^2 - \square\, x + 2) = 7x^4 - 2x^3 - 8x^2 + x + \square$

11. $(7n - 3n^3) + (16 - 8n^3 + 5n^2 - n) =$

12. $(-4x^4 + \square\, x - 9) + (\square - x^3 + 3x^2 + x^4) = \square\, x^4 - x^3 + 3x^2 + 6x + 2$

13. $(10y^4 - 2y^2 + 6y^3 - 7) - (9 - y + 2y^4) =$

14. $(4x^5 + 3x^4 - 5x + 1) - (x^3 + 2x^4 - x^5 + 1) =$

Find the product.

15. $2x^3(5x-1)$

16. $(w-8)(w+8)$

17. $(2c+4)(c+10)$

18. $(3x+9)(2x-5)$

19. $(y-1)(y^2+6y-2)$

20. $(2n+5)(2n^2-n-7)$

21. $(x-3)^3$

22. $(4m+1)^2$

23. $3x^r(5x^{2r}+4x^{3r-1})$

24. $2x(x-1)^2$

25. $(6x^m - 5)(2x^{2m} - 3)$

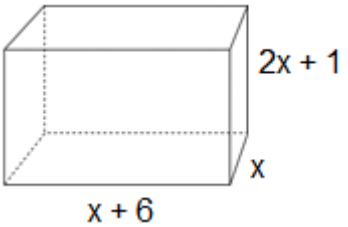
26. $-5x(x-1) - (2x+5)(x-3)$

27. Find two polynomials that the product has degree 6 and the sum has degree 3.

28. Find two polynomials that the product has degree 6 and the sum has degree 4.

Write the volume of the figure as a polynomial in standard form.

29. $V = lwh$



30. $V = \frac{1}{3}\pi r^2 h$