Advanced Algebra Name _____
Homework 2.3
Function Operations Period _____

SHOW ALL WORK.

Complete Parts A & B OR Parts B & C

PART A:

Find the sum or difference.

1. $(3x^2-5)+(7x^2-3)$ **2.** $(x^2-3x+5)-(-4x^2+8x+9)$

3. $(4y^2+9y-5)-(4y^2-5y+3)$ **4.** $(z^2+5z-7)+(5z^2-11z-6)$

Find the product of the polynomials

5. $x(2x^2-5x+7)$ **6.** $5x^2(6x+2)$

PART B:

Find the sum or difference.

7. $(5b-6b^3+2b^4)-(9b^3+4b^4-7)$ **8.** $(3y^2-6y^4+5-6y)+(5y^4-6y^3+4y)$

9. $(x^4-x^3+x^2-x+1)+(x+x^4-1-x^2)$ **10.** $(8v^4-2v^2+v-4)-(3v^3-12v^2+8v)$

11. What is the result when $2x^4 - 8x^2 - x + 10$ is subtracted from $8x^4 - 4x^3 - x + 2$?

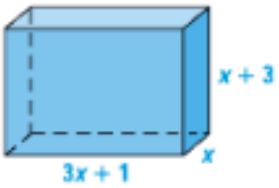
Find the product of the polynomials

12. $(w+4)(w^2+6w-11)$ **13.** $(2a-3)(a^2-10a-2)$ **14.** $(5c^2-4)(2c^2+c-3)$

15. $(z-4)(-z+2)(z+8)$ **16.** $(a-6)(2a+5)(a+1)$ **17.** $(3p+1)(p+3)(p+1)$

Write the figure's volume as a polynomial in standard form

18. $V = \ell wh$



19. $V = \pi r^2 h$

For problems #20-26, let $f(x) = 5x + 2$, $g(x) = -x - 1$, and $h(x) = 9 - 2x$ Perform the indicated operation.

20. $\frac{g(x)}{h(x)} =$ _____ Domain:_____

21. $\frac{f(x)}{g(x)} =$ _____ Domain:_____

22. $\frac{g(x)}{f(x)} =$ _____ Domain:_____

23. g(h(x)) = _____ **24.** f(h(x))=_____

25. g(f(x))=_____ **26.** f(f(x))=_____

27. The cost (in dollars) of producing x sneakers in a factory is given by C(x) = 60x + 750. The numbers of sneakers produced in t hours is given by x(t) = 50t.

a. Find C(x(t)).

b. Evaluate C(x(5)) and explain what this number represents.

PART C:

Find the product of the polynomials

28. $(-d^2+4d+3)(3d^2-7d+6)$ **29.** $(3y^2+6y-1)(4y^2-11y-5)$

For problems #30-31, let $f(x)=5x^2-2$, $g(x)=3x-1$, and $h(x)=\frac{5}{x+3}$ Perform the indicated operation.

30. f(g(x)) = _____ **31.** h(g(x))=_____