Name: Key Date: _____ Period: _____

## 4.2 Adding Subtracting & Multiplying Polynomial Functions CYU

☑ *Use when you get it right all by yourself*

***S*** *Use when you did it all by yourself, but made a silly mistake*

***H*** *Use when you could do it alone with a little help from teacher or peer*

***G*** *Use when you completed the problem in a group*

***X*** *Use when a question was attempted but wrong (get help)*

***N*** *Use when a question was not even attempted*

| CONCEPTS | BASIC | INTERMEDIATE | ADVANCED |
|---|---|---|---|
| Adding Polynomials | 1, 2 | | |
| Subtracting Polynomials | 3, 4 | | |
| Multiplying Polynomials | 5, 6 | 7 - 8 | 13 |
| Pascal's Triangle | | 9 - 11 | 12 - 13 |

*Find the sum. Show all work for full credit.*

1. $(12x^5 - 3x^4 + 2x - 5) + (8x^4 - 3x^3 + 4x + 1)$

$12x^5 + 5x^4 - 3x^3 + 6x - 4$

2. $(9x^4 - 3x^3 + 4x^2 + 5x + 7) + (11x^4 - 4x^2 - 11x - 9)$

$20x^4 - 3x^3 - 6x - 2$

*Find the difference. Show all work for full credit.*

3. $(5x^6 - 2x^4 + 9x^3 + 2x - 4) - (7x^5 - 8x^4 + 2x - 11)$

$5x^6 - 7x^5 + 6x^4 + 9x^3 + 7$

4. $(4x^5 - 7x^3 - 9x^2 + 18) - (14x^5 - 8x^4 + 11x^2 + x)$

$-10x^5 + 8x^4 - 7x^3 - 20x^2 - x + 18$

*Find the product. Show all work for full credit.*

5. $(5x^2 - 4x + 6)(-2x + 3)$

$-10x^3 + 23x^2 - 24x + 18$

6. $(3x^2 + x - 2)(-4x^2 - 2x - 1)$

$-12x^4 - 10x^3 + 3x^2 + 3x + 2$

7. $(3c - 5)^2$

$9c^2 - 30c + 25$

8. $(9g - 4)^2$

$81g^2 - 72g + 16$

*Use Pascal's Triangle to expand the binomial. Show all work for full credit.*

9. $(2z + 4)^3$

$8z^3 + 48z^2 + 96z + 64$

10. $(2q - 3)^4$

$16q^4 - 96q^3 + 216q^2 - 216q + 81$

11. $(g + 2)^5$

$g^5 + 10g^4 + 40g^3 + 80g^2 + 80 + 32$

12. $(np - 1)^4$

$n^4p^4 - 4n^3p^3 + 6n^2p^2 - 4np + 1$

13. **COMPARING METHODS** Find the product of the expression $(a^2 + 4b^2)^2(3a^2 - b^2)^2$ using two different methods. Which method do you prefer? Explain.

$9a^8 + 66a^6b^2 + 97a^4b^4 - 88a^2b^6 + 16b^8$

Pascal's Δ & Multiply in a Punnett Square or FOIL.

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**CYU Reflection:** *How far can you go: basic, intermediate, or advanced?*

**Rate your mastery level!**

How confident are you with the skills this CYU covered? Circle the score you would give yourself.