## Adding, Subtracting, and Multiplying Polynomials NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| *Write in standard form and name each polynomial based on degree and number of terms.*  |
| 1. $4y^{3}-4y^{2}+3-y $3. $2+4a^{2}-a^{3}$5. $3-2f^{2}-5f$ | 2. $x^{2}+x^{4}-6$4. $6+7k^{2}$6. $4f+7f^{3}-9f^{2}$ |
| *Simplify each expression. Put all answers into standard form.*

|  |  |
| --- | --- |
| 7. $\left(2w^{3}-4w^{2}+3 \right)+\left(w^{3}-3w^{2}+1\right)$ | 8. $\left(4f+7f^{3}-9f^{2} \right)+ \left(3-2f^{2}-5f \right)$ |
| 9. $\left(3x^{2}-5x \right)-\left(x^{2}+4x+3 \right)$ | 10. $\left(4f+7f^{3}-9f^{2} \right)- \left(3-2f^{2}-5f \right)$ |
| 11. $(6x^{2} + 4x + 1) – (4x + 20)$ | 12. $\left(x^{2}+4 \right)- \left(x-4 \right)+\left(x^{2}-2x\right)$ |
| 13. $\left(2x+3\right)- \left(x-4 \right)+\left(x+2\right)$ |  |

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Find the product. Write your answer in standard form. NO WORK = NO CREDIT! Use another piece of paper if you need to.

|  |  |  |
| --- | --- | --- |
| 1. 2x (8 – x – 3x2)
 | 1. -3x (-x2 + 3x – 4)
 | 1. x3(4 – x)
 |
| 1. -x2 (2x2 – 4x + 6)

7. (5x – 5)(5x + 5) | 5. 5(-x2 – 4x + 6) 8. (x + 3)(4x2 – x) | 6. -2x( -6x2 + 8 – x)9. (3n + 4)2 |
| 10. (x – 11)2  | 11. (x + 4)(x2 – 2x + 3) | 12. (3t + 5)(t – 3) |

CHALLENGE: (x3 – 2x2 + 3x – 5) (x3 – 3x2 + 6)

13. Classify the product in numbers 7 and 8.

**BULL’S EYE- Working with Polynomials NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

In the center of the Bull’s Eye, there is a polynomial. In the first ring, there is another polynomial. In the following ring, add the two polynomials. In the next ring, subtract \*\*x+2 – (poly)\*\* the two polynomials, and in the last ring, multiply the two polynomials. Lastly, classify the **product** according to number of terms.

CLASSIFY

x + 5

3x3

2x2 – 7x

MULTIPLY

SUBTRACT

ADD

POLY

x + 2

4x + 1

x2 + 2x + 4

#2

#3

#4

#5

#1