

Name _____ Date _____ Pd _____

Alg2 Homework: POLYNOMIAL OPERATIONS

Add the following polynomials (Write answers in standard form.)

- $(7j^3 - 2) + (5j^3 - j - 3)$
- $(8a^5 - 4) + (3a^5 + a - 2)$
- $(6m^5 + 1) + (2m^5 + 9m - 1)$
- $(3m^5 + 1) + (9m^5 + 3m - 2)$
- $(-5x^2 - x + 4) + (-3x^2 - 5x + 2)$
- $(-4x + 4x^3 + 7) + (3x^3 - 9 - 3x)$
- $(3x^2 - 2x + 1) + (-x^2 + 3x + 1)$

Subtract the following polynomials (Write answers in descending order):

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

Multiply the following polynomials:

- | | |
|----------------------------------|-------------------------------|
| 15. $(8x^3y^2)(-3x^2y^3)$ | 25. $(4x - 3)(3x - 5)$ |
| 16. $(-9x^3y)(-8x^2y^3)$ | 26. $(x - 8)(x - 7)$ |
| 17. $j^2(k^5j^3)$ | 27. $(6a + 1)(5a + 2)$ |
| 18. $a^4(b^4a^6)$ | 28. $(5x + 4y)(2x + 5y)$ |
| 19. $2x^3(9x^2 + 5y)$ | 29. $(2x + y)(4x - 9y)$ |
| 20. $5x^3(2x + 4y)$ | 30. $(6r - 5)(6r + 1)$ |
| 21. $5m^2(3m^3 + 5m^2 - 4m + 6)$ | 31. $(6c + 7)(6c - 7)$ |
| 22. $-4x^2y(x^2 + 7xy - 6y^3)$ | 32. $(3x + 5y)^2$ |
| 23. $(x + 6)(x + 2)$ | 33. $(x - 2)(x^2 - x + 3)$ |
| 24. $(x - 6)(x + 9)$ | 34. $(2x - 5)(5x^2 + 4x + 7)$ |

Answers

1. $12j^3 - j - 5$
2. $11a^5 + a - 6$
3. $8m^5 + 9m$
4. $12m^5 + 3m - 1$
5. $-8x^2 - 6x + 6$
6. $7x^3 - 7x - 2$
7. $2x^2 + x + 2$

8. $-4x^2 + 9x - 2$
9. $16x^2 - 8x + 5$
10. $6x^2 + 3x + 5$
11. $5x^3 - 6x + 3$
12. $-2x^3 + 10x^2 - 6x + 18$
13. $-x^3 + 11x^2 - 8x + 10$
14. $-2x^3 + 12x^2 - 8x + 10$

15. $-24x^5y^5$
16. $72x^5y^4$
17. k^5j^5
18. $a^{10}b^4$
19. $18x^5 + 10x^3y$
20. $10x^4 + 20x^3y$
21. $15m^5 + 25m^4 - 20m^3 + 30m^2$
22. $-4x^4y - 28x^3y^2 + 24x^2y^4$
23. $x^2 + 8x + 12$
24. $x^2 + 3x - 54$
25. $12x^2 - 29x + 15$
26. $x^2 - 15x + 56$
27. $30a^2 + 17a + 2$
28. $10x^2 + 33xy + 20y^2$
29. $8x^2 - 14xy - 9y^2$
30. $36r^2 - 24r - 5$
31. $36c^2 - 49$
32. $9x^2 + 30xy + 25y^2$
33. $x^3 - 3x^2 + 5x - 6$
34. $10x^3 - 17x^2 - 6x - 35$