

POLYNOMIAL OPERATIONS PRACTICE

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

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

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

8. $(-x^2 + x - 4) - (3x^2 - 8x - 2)$
9. $(8x^2 - 3x) - (5x - 5 - 8x^2)$
10. $(-x^2 - 5x - 3) - (-7x^2 - 8x - 8)$
11. $(-2x^3 + x) - (7x - 3 - 7x^3)$
12. $(3x^3 + 3x^2 + 9) - (5x^3 - 7x^2 + 6x - 9)$
13. $(5x^3 + 5x^2 + 5) - (6x^3 - 6x^2 + 8x - 5)$
14. $(5x^3 + 3x^2 + 5) - (7x^3 - 9x^2 + 8x - 5)$

Multiply the following polynomials:

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|----------------------------------|-------------------------------|
| 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. $(2x - 5)(5x^2 + 4x + 7)$ |

Divide the following polynomials:

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| 35. $\frac{9x-6}{3}$ | 45. $\frac{f^3+64}{f+4}$ |
| 36. $\frac{4x-7}{2}$ | 46. $\frac{4p-2+3p^2}{p-1}$ |
| 37. $\frac{x^2-3x+5}{x}$ | 47. $\frac{3m-4+2m^2}{m+5}$ |
| 38. $\frac{5x^2-25x+2}{-5x}$ | 48. $\frac{j^3-64}{j-4}$ |
| 39. $\frac{4x^{10}-5x^9-20x^4}{4x^2}$ | 49. $\frac{-5p+4p^2+4}{p-2}$ |
| 40. $(-x^6 + x^5 + 7x^2 - 9) \div x^4$ | 50. $(4p + 3p^2 - 1) \div (p + 4)$ |
| 41. $(x^2 + 2x + 6) \div x$ | 51. $(20x^2 - 13x + 2) \div (5x - 2)$ |
| 42. $(3x^2 - 15x + 5) \div (-3x)$ | 52. $(12x^2 - 6x^3 - 3 - 9x) \div (3x - 3)$ |
| 43. $(2x^{11} - 5x^7 - 10x^6) \div 2x^3$ | 53. $(8x^2 - 2x - 3) \div (2x + 1)$ |
| 44. $(-2x^6 + 5x^5 + 9x^2 + 2) \div x^4$ | 54. $(-3x^2 + 6x^3 - 4 - x) \div (2x + 1)$ |

Base 5 Additions and Subtraction Worksheet

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|--------------------|----------------------|----------------------|----------------------|
| 1. $132_5 + 143_5$ | 2. $1342_5 + 2211_5$ | 3. $3324_5 + 4214_5$ | 4. $3014_5 + 1332_5$ |
| 5. $203_5 - 132_5$ | 6. $4314_5 - 1402_5$ | 7. $2213_5 - 1342_5$ | 8. $3102_5 - 1103_5$ |

Adding and Subtracting Matrices**Perform the indicated operations.**

1. $3 \begin{bmatrix} 1 & 5 \\ -1 & -5 \end{bmatrix} + 4 \begin{bmatrix} -4 & -3 \\ -2 & -1 \end{bmatrix}$

2. $\begin{bmatrix} 2 & -1 \\ 3 & 7 \\ 14 & -9 \end{bmatrix} + \begin{bmatrix} -6 & 9 \\ 7 & -11 \\ -8 & 17 \end{bmatrix}$

3. $6 \begin{bmatrix} 1 \\ -3 \\ 0 \end{bmatrix} + 5 \begin{bmatrix} 2 \\ 7 \\ -8 \end{bmatrix} - 3 \begin{bmatrix} -1 \\ 4 \\ 12 \end{bmatrix}$

4. $6 \begin{bmatrix} 2 & 3 \\ -1 & 4 \\ 8 & -6 \end{bmatrix} + 5 \begin{bmatrix} 7 & -4 \\ 3 & 2 \\ 0 & -1 \end{bmatrix}$

5. $7 \begin{bmatrix} 2 & -1 & 8 \\ 4 & 7 & 9 \end{bmatrix} - 2 \begin{bmatrix} -1 & 4 & -3 \\ 7 & 2 & -6 \end{bmatrix}$

6. $\frac{3}{4} \begin{bmatrix} 8 & 12 \\ -16 & 20 \end{bmatrix} + \frac{2}{3} \begin{bmatrix} 27 & -9 \\ 54 & -18 \end{bmatrix}$

7. $\frac{1}{2} \begin{bmatrix} 6 & 12 \\ 4 & 24 \end{bmatrix} - \frac{1}{4} \begin{bmatrix} 8 & 16 \\ 0 & 44 \end{bmatrix}$

8. $\frac{1}{2} \begin{bmatrix} -4 & -8 \\ 100 & 200 \\ 50 & 80 \end{bmatrix} + \begin{bmatrix} 5 & 10 \\ 20 & 30 \\ 40 & 60 \end{bmatrix}$

Solve for the variables.

10. $\begin{bmatrix} 2x \\ x \end{bmatrix} - \begin{bmatrix} 8y \\ y \end{bmatrix} = \begin{bmatrix} 12 \\ 1 \end{bmatrix}$

11. $\begin{bmatrix} 3x \\ y + 4 \end{bmatrix} = \begin{bmatrix} y + 8 \\ 17 \end{bmatrix}$