

Algebra 103 Polynomial Operations

Directions: Simplify each polynomial expression.

Part 1: Add the Polynomials

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

Answer: _____

2. $(4a^2 + 3a) + (2a^2 - 6a)$

Answer: _____

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

Answer: _____

4. $(6y - 3) + (2y + 7)$

Answer: _____

5. $(7m^2 - 2m + 5) + (3m^2 + 4m - 1)$

Answer: _____

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

Answer: _____

7. $(9 + 3x) + (x - 4)$

Answer: _____

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

Answer: _____

9. $(2a + 4) + (3a - 1)$

Answer: _____

10. $(6x^2 + 5x - 2) + (x^2 - x + 3)$

Answer: _____



Part 2: Subtract the Polynomials

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

Answer: _____

12. $(4a^2 + 3a) - (2a^2 - 6a)$

Answer: _____

13. $(x^2 + x + 1) - (2x^2 - x + 5)$

Answer: _____

14. $(6y - 3) - (2y + 7)$

Answer: _____

15. $(7m^2 - 2m + 5) - (3m^2 + 4m - 1)$

Answer: _____

16. $(5x^3 + x^2) - (2x^3 - x^2)$

Answer: _____

17. $(9 + 3x) - (x - 4)$

Answer: _____

18. $(x^2 + 3x - 5) - (2x^2 - 6x + 7)$

Answer: _____

19. $(2a + 4) - (3a - 1)$

Answer: _____

20. $(6x^2 + 5x - 2) - (x^2 - x + 3)$

Answer: _____

Part 3: Multiply the Polynomials

21. $(x + 2)(x + 3)$

Answer: _____

22. $(2x)(3x + 4)$

Answer: _____

23. $(x - 5)(x + 5)$

Answer: _____

24. $(a + 2)(a - 3)$

Answer: _____

25. $(2x + 3)^2$

Answer: _____

26. $(x^2)(x + 4)$

Answer: _____

27. $(x + 1)(x^2 - x + 1)$

Answer: _____

28. $(2a + 1)(a - 4)$

Answer: _____

29. $(x - 2)(x^2 + 2x + 4)$

Answer: _____

30. $(3x)(x^2 - 2x + 1)$

Answer: _____

Part 4: Divide the Polynomials

31. $(6x^2 + 9x) \div 3x$

Answer: _____

32. $(x^2 - 9) \div (x - 3)$

Answer: _____

33. $(2x^2 + 4x) \div 2x$

Answer: _____

34. $(x^2 + 5x + 6) \div (x + 2)$

Answer: _____

35. $(4x^2 - 8x) \div 4x$

Answer: _____

36. $(x^3 - 1) \div (x - 1)$

Answer: _____

37. $(x^2 - 4) \div (x - 2)$

Answer: _____

38. $(6x^2 + 15x) \div 3x$

Answer: _____

39. $(x^2 + 2x) \div x$

Answer: _____

40. $(2x^2 - 18) \div 2$

Answer: _____

Answer Key

1. $8x - 2$

2. $6a^2 - 3a$

3. $3x^2 + 6$

4. $8y + 4$

5. $10m^2 + 2m + 4$

6. $7x^3$

7. $4x + 5$

8. $3x^2 - 3x + 2$

9. $5a + 3$

10. $7x^2 + 4x + 1$

11. $-2x + 6$

12. $2a^2 + 9a$

13. $-x^2 + 2x - 4$

14. $4y - 10$

15. $4m^2 - 6m + 6$

16. $3x^3 + 2x^2$

17. $2x + 13$

18. $-x^2 + 9x - 12$

19. $-a + 5$

20. $5x^2 + 6x - 5$

21. $x^2 + 5x + 6$

22. $6x^2 + 8x$

23. $x^2 - 25$

24. $a^2 - a - 6$

25. $4x^2 + 12x + 9$

26. $x^3 + 4x^2$

27. $x^3 + x^2 + x$

28. $2a^2 - 7a - 4$

29. $x^3 - 8$

30. $3x^3 - 6x^2 + 3x$

31. $2x + 3$

32. $x + 3$

33. $x + 2$

34. $x + 3$

35. $x - 2$

36. $x^2 + x + 1$

37. $x + 2$

38. $2x + 5$

39. $x + 2$

40. $x^2 - 9$

