

4.3 Multiplying Polynomials

Name _____

Multiply and simplify where possible.

1. $(7x)(5x)$

2. $(8x)(2x)$

3. $(4x^3)(-3x^2)$

4. $(-8x^2)(2x^5)$

5. $2(3x - 5)$

6. $5(2a + 4)$

7. $2x^2(3x^3 - 4x)$

8. $3a(4a^2 + 5a^3)$

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

10. $-5a(a^2 - 2a + 1)$

Answers: **1.** $35x^2$; **3.** $-12x^5$; **5.** $6x - 10$; **7.** $6x^5 - 8x^3$; **9.** $10x^3 - 8x^2 + 14x$

Multiply and simplify where possible.

11. $(x + 8)(x + 3)$

12. $(x + 2)(x + 1)$

13. $(3x + 8)(x - 2)$

14. $(4x + 3)(x - 3)$

15. $(x - 1)(2x + 3)$

16. $(x - 4)(3x + 5)$

17. $(7x - 1)(2x - 3)$

18. $(5x - 2)(2x - 1)$

Answers: **11.** $x^2 + 11x + 24$; **13.** $3x^2 + 2x - 16$; **15.** $2x^2 + x - 3$; **17.** $14x^2 - 23x + 3$

Multiply and simplify where possible.

19. $(x + 8)(x - 8)$

20. $(x - 2)(x + 2)$

21. $(x^2 - 1)(x^2 - 1)$

22. $(3x^2 + 1)(3x^2 + 1)$

23. $(3x + 8)^2$

24. $(4x - 3)^2$

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

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

Answers: 19. $x^2 - 64$; 21. $x^4 - 2x^2 + 1$; 23. $9x^2 + 48x + 64$; 25. $5x^3 - 3x^2 - 5x + 3$

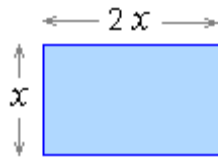
Multiply and simplify where possible.

27. $(5x + 1)(2x^2 - 3x - 5)$

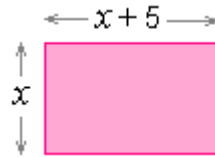
28. $(8x + 3)(2x^2 + x - 1)$

Write an expression for the area of each rectangle below.

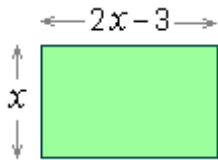
29.



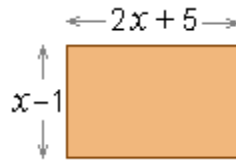
30.



31.



32.



Answers: 27. $10x^3 - 13x^2 - 28x - 5$; 29. $2x^2$; 31. $2x^2 - 3x$