

Multiplying Polynomials (ALG.POL.04)

Multiply. Write each answer in standard form.

1. $-2x^3(5x^2 - 2x + 9)$

2. $-7k^5(-3k^4 + 2k^2 - 8)$

3. $-11g^4(-2g^9 + 4g^6 + g^3 - 8)$

4. $(y - 5)(y + 8)$

5. $(x + 8)(6x + 4)$

6. $(7n - 4)(6n + 3)$

7. $(5p - 8)(3p + 2)$

8. $(8c - 3d)(4c^2 + 3d)$

9. $(r^3 - 5t^2)(5r^2 + 3t)$

10. $(5a - 3)(5a + 3)$

11. $(9c^3 - 2d)(9c^3 + 2d)$

12. $(7a^2b + 5c^4)(7a^2b - 5c^4)$

13. $3x(2x - 5)(2x + 5)$

14. $(u - 4)^2$

15. $(2w + 3)^2$

16. $(4n - 3)(n^2 + 5n - 6)$

17. $(m^2 - 5)(2m^3 - m^2 + 9)$

18. $(5p^2 + 8p - 2)(7p^2 - p + 4)$

19. $(2x^5 - 5x^3 + x)(3x^4 + 5x^2 - 2)$

20. $(7x - 3)(4x^2 - 9x + 2)$

21. $(x^2 + 5)(7x^5 - x^4 + 3x^2 + 9)$

22. $(b^2 - b + 3)^2$

23. $(5y^3 - 8y + 3)^2$

24. $(3u^3 - 5u^2 + u - 2)^2$

25. $(2a - 5)(2a + 5)(5a - 2)$

26. $(7c + 3)(c - 5)^2$

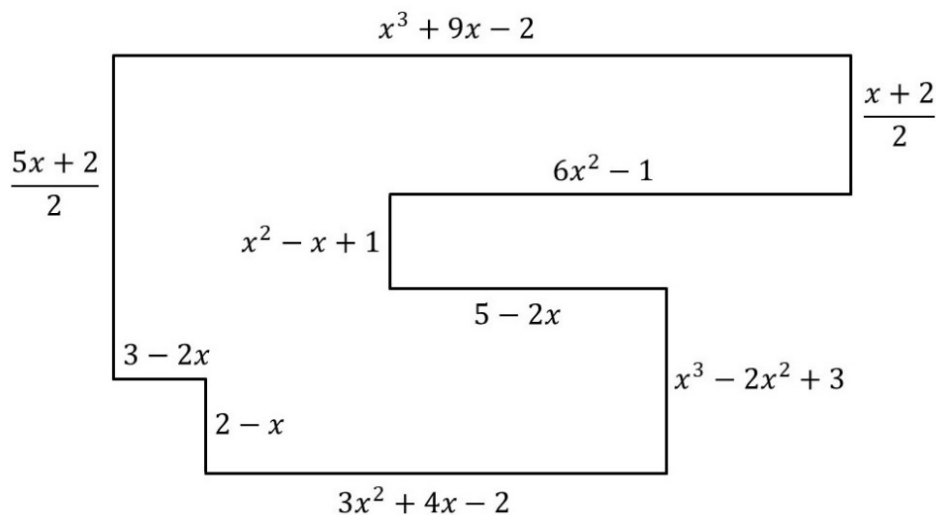
27. $(m + 1)^2(m - 2)^2$

28. $(7n + 3)(3n + 7)(7n - 3)$

29. $(p - 1)^3$

30. $(2x - 1)^4$

31. A certain rectangle has a length of $(8x - 3)$ meters and a width of $(x^2 - 6x + 4)$ meters.
- Write an algebraic expression (in terms of x) that represents the area of the rectangle, including units.
 - If $x = 8$, determine the dimensions of the rectangle, including units.
 - If $x = 8$, determine the area of the rectangle, including units.
32. A certain rectangular prism has a length of $(5a - 8)$ inches, a width of $(a^2 + 9)$ inches, and a height of $(3a + 8)$ inches.
- Write an algebraic expression (in terms of a) that represents the volume of the rectangular prism, including units.
 - If $a = 6$, determine the dimensions of the rectangular prism, including units.
 - If $a = 6$, determine the volume of the rectangular prism, including units.
33. Use the composite figure in the diagram to answer each part.
- Write an algebraic expression in terms of x for the area of the composite figure.
 - If $x = 1$ yard, then use the expression you wrote in **part a** to calculate the area of the figure, including units.
 - If $x = 1$ yard, then determine the dimensions in the composite figure.
 - Use the dimensions from **part c** to calculate the area of the composite figure.
 - How do your answers in **parts b and d** compare to one another?



34. Use the figure in the diagram to answer each part.

- Write an algebraic expression in terms of x for the volume of the right triangular prism.
- If $x = 6$ inches, then what are the dimensions of the right triangular prism, including units?
- If $x = 6$ inches, then calculate the volume of the prism, including units.
- For what values of x does the right triangular prism in the diagram fail? Explain your answer.

