

ANSWER PRESENTATION TOOL

Algebra 2 - Student Edit

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2 - Practice

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$$\begin{aligned} 2. & (-5x^2 + 4x - 2) + (-8x^2 + 2x + 1) \\ &= -5x^2 + 4x - 2 - 8x^2 + 2x + 1 \\ &= -13x^2 + 6x - 1 \end{aligned}$$

$$\begin{aligned} 4. & (8x^4 + 2x^2 - 1) + (3x^3 - 5x^2 + 7x + 1) \\ &= 8x^4 + 2x^2 - 1 + 3x^3 - 5x^2 + 7x + 1 \\ &= 8x^4 + 3x^3 - 3x^2 + 7x \end{aligned}$$

$$\begin{aligned} 6. & (9x^4 - 3x^3 + 4x^2 + 5x + 7) + (11x^4 - 4x^2 - 11x - 9) \\ &= 9x^4 - 3x^3 + 4x^2 + 5x + 7 + 11x^4 - 4x^2 - 11x - 9 \\ &= 20x^4 - 3x^3 - 6x - 2 \end{aligned}$$

$$\begin{aligned} 8. & (7x^4 - 9x^3 - 4x^2 + 5x + 6) - (2x^4 + 3x^3 - x^2 + x - 4) \\ &= 7x^4 - 9x^3 - 4x^2 + 5x + 6 - 2x^4 - 3x^3 + x^2 - x + 4 \\ &= 5x^4 - 12x^3 - 3x^2 + 4x + 10 \end{aligned}$$

$$\begin{aligned} 10. & (4x^5 - 7x^3 - 9x^2 + 18) - (14x^5 - 8x^4 + 11x^2 + x) \\ &= 4x^5 - 7x^3 - 9x^2 + 18 - 14x^5 + 8x^4 - 11x^2 - x \\ &= -10x^5 + 8x^4 - 7x^3 - 20x^2 - x + 18 \end{aligned}$$

$$\begin{aligned} 12. & (11x^4 - 9x^2 + 3x + 11) - (2x^4 + 6x^3 + 2x - 9) \\ & = 11x^4 - 9x^2 + 3x + 11 - 2x^4 - 6x^3 - 2x + 9 \\ & = 9x^4 - 6x^3 - 9x^2 + x + 20 \end{aligned}$$

$$14. -4x^5(11x^3 + 2x^2 + 9x + 1) = -44x^8 - 8x^7 - 36x^6 - 4x^5$$

$$\begin{aligned} 16. & (-x - 3)(2x^2 + 5x + 8) \\ & = -x(2x^2 + 5x + 8) - 3(2x^2 + 5x + 8) \\ & = -2x^3 - 5x^2 - 8x - 6x^2 - 15x - 24 \\ & = -2x^3 - 11x^2 - 23x - 24 \end{aligned}$$

$$\begin{aligned} 18. & (3x^2 + x - 2)(-4x^2 - 2x - 1) \\ & = 3x^2(-4x^2 - 2x - 1) + x(-4x^2 - 2x - 1) \\ & \quad - 2(-4x^2 - 2x - 1) \\ & = -12x^4 - 6x^3 - 3x^2 - 4x^3 - 2x^2 - x + 8x^2 + 4x + 2 \\ & = -12x^4 - 10x^3 + 3x^2 + 3x + 2 \end{aligned}$$

$$\begin{aligned} 20. & (4x^2 - 8x - 2)(x^4 + 3x^2 + 4x) \\ & = 4x^2(x^4 + 3x^2 + 4x) - 8x(x^4 + 3x^2 + 4x) \\ & \quad - 2(x^4 + 3x^2 + 4x) \\ & = 4x^6 + 12x^4 + 16x^3 - 8x^5 - 24x^3 - 32x^2 \\ & \quad - 2x^4 - 6x^2 - 8x \\ & = 4x^6 - 8x^5 + 10x^4 - 8x^3 - 38x^2 - 8x \end{aligned}$$

$$\begin{aligned}
 22. & (x - 5)(x + 2)(x - 6) \\
 &= (x^2 - 3x - 10)(x - 6) \\
 &= (x^2 - 3x - 10)x - (x^2 - 3x - 10)6 \\
 &= x^3 - 3x^2 - 10x - 6x^2 + 18x + 60 \\
 &= x^3 - 9x^2 + 8x + 60
 \end{aligned}$$

$$\begin{aligned}
 24. & (2x + 5)(x - 2)(3x + 4) \\
 &= (2x^2 + x - 10)(3x + 4) \\
 &= (2x^2 + x - 10)(3x) + (2x^2 + x - 10)4 \\
 &= 6x^3 + 3x^2 - 30x + 8x^2 + 4x - 40 \\
 &= 6x^3 + 11x^2 - 26x - 40
 \end{aligned}$$

$$\begin{aligned}
 26. & (4 - 5x)(1 - 2x)(3x + 2) \\
 &= (10x^2 - 13x + 4)(3x + 2) \\
 &= (10x^2 - 13x + 4)(3x) + (10x^2 - 13x + 4)2 \\
 &= 30x^3 - 39x^2 + 12x + 20x^2 - 26x + 8 \\
 &= 30x^3 - 19x^2 - 14x + 8
 \end{aligned}$$

28. The total cost of the textbooks is the product of 29 and 31.
 Note that $29 = 30 - 1$ and $31 = 30 + 1$. So, the product of 29 and 31 is

$$\begin{aligned}
 (29)(31) &= (30 - 1)(30 + 1) \\
 &= 30^2 - 1^2 \\
 &= 900 - 1 \\
 &= 899.
 \end{aligned}$$

So, the total cost is \$899.

$$\begin{aligned} 30. (m + 6)^2 &= m^2 + 2(m)(6) + 6^2 \\ &= m^2 + 12m + 36 \end{aligned}$$

$$\begin{aligned} 32. (2y - 5)(2y + 5) &= (2y)^2 - 5^2 \\ &= 4y^2 - 25 \end{aligned}$$

$$\begin{aligned} 34. (9g - 4)^2 &= (9g)^2 - 2(9g)(4) + 4^2 \\ &= 81g^2 - 72g + 16 \end{aligned}$$

$$\begin{aligned} 36. (4n - 3)^3 &= (4n)^3 - 3(4n)^2(3) + 3(4n)(3)^2 - (3)^3 \\ &= 64n^3 - 144n^2 + 108n - 27 \end{aligned}$$

$$\begin{aligned} 38. (wz + 8)^3 &= (wz)^3 + 3(wz)^2(8) + 3(wz)(8)^2 + (8)^3 \\ &= w^3z^3 + 24w^2z^2 + 192wz + 512 \end{aligned}$$

40. The exponent cannot be distributed through a binomial. The three binomials must be multiplied.

$$\begin{aligned} (2x - 7)^3 &= (2x)^3 - 3(2x)^2(7) + 3(2x)(7)^2 - 7^3 \\ &= 8x^3 - 84x^2 + 294x - 343 \end{aligned}$$

42. The coefficients from the third row of Pascal's Triangle are 1, 3, 3, and 1.

$$\begin{aligned} (2t + 4)^3 &= 1(2t)^3 + 3(2t)^2(4) + 3(2t)(4)^2 + 1(4)^3 \\ &= 8t^3 + 48t^2 + 96t + 64 \end{aligned}$$

44. The coefficients from the fifth row of Pascal's Triangle are 1, 5, 10, 10, 5, and 1.

$$\begin{aligned}(g + 2)^5 &= 1(g)^5 + 5(g)^4(2) + 10(g)^3(2)^2 \\ &\quad + 10(g)^2(2)^3 + 5(g)(2)^4 + 1(2)^5 \\ &= g^5 + 10g^4 + 40g^3 + 80g^2 + 80g + 32\end{aligned}$$

46. The coefficients from the fourth row of Pascal's Triangle are 1, 4, 6, 4, and 1.

$$\begin{aligned}(np - 1)^4 &= 1(np)^4 + 4(np)^3(-1) + 6(np)^2(-1)^2 \\ &\quad + 4(np)(-1)^3 + 1(-1)^4 \\ &= n^4p^4 - 4n^3p^3 + 6n^2p^2 - 4np + 1\end{aligned}$$

