

Multiplying a Binomial by Two Trinomials (D)

Simplify each expression.

1. $(7y^4 + 3y^3)(-2y^2 - y - 6)(-7y^3 - 3y^2 + 7y)$

2. $(8x^5 + 8x^4)(-5x^4 + 6x^3 + 3x^2)(-4x^5 + 7x^4 + 3x^3)$

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

4. $(3a - 1)(-5a^3 + 2a^2 - 2a)(-4a^3 - 7a^2 + 6a)$

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

Multiplying a Binomial by Two Trinomials (D) Answers

Simplify each expression.

$$\begin{aligned} 1. & (7y^4 + 3y^3)(-2y^2 - y - 6)(-7y^3 - 3y^2 + 7y) \\ & = 98y^9 + 133y^8 + 256y^7 + 170y^6 - 261y^5 - 126y^4 \end{aligned}$$

$$\begin{aligned} 2. & (8x^5 + 8x^4)(-5x^4 + 6x^3 + 3x^2)(-4x^5 + 7x^4 + 3x^3) \\ & = 160x^{14} - 312x^{13} - 352x^{12} + 432x^{11} + 384x^{10} + 72x^9 \end{aligned}$$

$$\begin{aligned} 3. & (-4m^3 - 4m^2)(m^5 - 4m^4 + 4m^3)(9m^5 + 4m^4 - 7m^3) \\ & = -36m^{13} + 92m^{12} + 76m^{11} - 228m^{10} - 64m^9 + 112m^8 \end{aligned}$$

$$\begin{aligned} 4. & (3a - 1)(-5a^3 + 2a^2 - 2a)(-4a^3 - 7a^2 + 6a) \\ & = 60a^7 + 61a^6 - 135a^5 + 114a^4 - 62a^3 + 12a^2 \end{aligned}$$

$$\begin{aligned} 5. & (7z^3 - 9z^2)(4z^4 + 9z^3 - 4z^2)(z^5 + z^4 + 4z^3) \\ & = 28z^{12} + 55z^{11} + 30z^{10} + 35z^9 - 400z^8 + 144z^7 \end{aligned}$$