

Multiplying a Binomial by Two Trinomials (E)

Simplify each expression.

1. $(4t^3 + 4t^2)(6t^2 - 2t - 9)(9t^2 + 6t + 3)$

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

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

4. $(9d^2 + 9d)(-5d^3 - 5d^2 - 7d)(6d^3 - 4d^2 - 2d)$

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

Multiplying a Binomial by Two Trinomials (E) Answers

Simplify each expression.

$$\begin{aligned} 1. & (4t^3 + 4t^2)(6t^2 - 2t - 9)(9t^2 + 6t + 3) \\ & = 216t^7 + 288t^6 - 228t^5 - 540t^4 - 348t^3 - 108t^2 \end{aligned}$$

$$\begin{aligned} 2. & (-7y^3 - 8y^2)(-2y^3 - 5y^2 - 6y)(6y^4 - y^3 + 5y^2) \\ & = 84y^{10} + 292y^9 + 511y^8 + 461y^7 + 362y^6 + 240y^5 \end{aligned}$$

$$\begin{aligned} 3. & (-7a^3 - 9a^2)(7a^2 + a + 4)(-7a^3 - 2a^2 + 7a) \\ & = 343a^8 + 588a^7 + 56a^6 - 164a^5 - 187a^4 - 252a^3 \end{aligned}$$

$$\begin{aligned} 4. & (9d^2 + 9d)(-5d^3 - 5d^2 - 7d)(6d^3 - 4d^2 - 2d) \\ & = -270d^8 - 360d^7 - 198d^6 + 234d^5 + 468d^4 + 126d^3 \end{aligned}$$

$$\begin{aligned} 5. & (2t^5 - 3t^4)(-t^4 - 8t^3 + 8t^2)(-4t^5 + t^4 + 6t^3) \\ & = 8t^{14} + 50t^{13} - 185t^{12} + 58t^{11} + 216t^{10} - 144t^9 \end{aligned}$$