

Multiplying a Binomial by Two Trinomials (H)

Simplify each expression.

1. $(-9t^4 + 5t^3)(2t^3 - 2t^2 - 2t)(7t^5 + 2t^4 - 7t^3)$

2. $(4p - 6)(-9p^4 - p^3 - 5p^2)(-6p^5 + 8p^4 - 3p^3)$

3. $(9f^2 - 8f)(-8f^4 - 4f^3 - 4f^2)(-9f^3 + 9f^2 + f)$

4. $(-2r^4 + 2r^3)(8r^5 + 8r^4 + 7r^3)(9r^3 + 8r^2 - 6r)$

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

Multiplying a Binomial by Two Trinomials (H) Answers

Simplify each expression.

$$\begin{aligned} 1. & (-9t^4 + 5t^3)(2t^3 - 2t^2 - 2t)(7t^5 + 2t^4 - 7t^3) \\ & = -126t^{12} + 160t^{11} + 238t^{10} - 250t^9 - 76t^8 + 70t^7 \end{aligned}$$

$$\begin{aligned} 2. & (4p - 6)(-9p^4 - p^3 - 5p^2)(-6p^5 + 8p^4 - 3p^3) \\ & = 216p^{10} - 588p^9 + 592p^8 - 442p^7 + 282p^6 - 90p^5 \end{aligned}$$

$$\begin{aligned} 3. & (9f^2 - 8f)(-8f^4 - 4f^3 - 4f^2)(-9f^3 + 9f^2 + f) \\ & = 648f^9 - 900f^8 + 216f^7 - 296f^6 + 284f^5 + 32f^4 \end{aligned}$$

$$\begin{aligned} 4. & (-2r^4 + 2r^3)(8r^5 + 8r^4 + 7r^3)(9r^3 + 8r^2 - 6r) \\ & = -144r^{12} - 128r^{11} + 114r^{10} + 142r^9 + 100r^8 - 84r^7 \end{aligned}$$

$$\begin{aligned} 5. & (2f - 2)(-8f^4 - 6f^3 + 5f^2)(-4f^4 + 3f^3 + 5f^2) \\ & = 64f^9 - 64f^8 - 156f^7 + 126f^6 + 80f^5 - 50f^4 \end{aligned}$$