

Multiplying a Binomial by Two Trinomials (F)

Simplify each expression.

1. $(9p^5 - p^4)(-2p^2 + p + 6)(-5p^5 + 4p^4 + 6p^3)$

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

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

4. $(5r^3 + 5r^2)(9r^5 + 4r^4 - 8r^3)(2r^2 + 5r + 1)$

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

Multiplying a Binomial by Two Trinomials (F) Answers

Simplify each expression.

$$\begin{aligned} 1. & (9p^5 - p^4)(-2p^2 + p + 6)(-5p^5 + 4p^4 + 6p^3) \\ & = 90p^{12} - 127p^{11} - 329p^{10} + 308p^9 + 294p^8 - 36p^7 \end{aligned}$$

$$\begin{aligned} 2. & (-8p^5 - 3p^4)(9p^3 + 2p^2 - 7p)(-p^4 - 5p^3 - 4p^2) \\ & = 72p^{12} + 403p^{11} + 453p^{10} - 99p^9 - 305p^8 - 84p^7 \end{aligned}$$

$$\begin{aligned} 3. & (-w - 2)(-6w^4 - 9w^3 + 4w^2)(4w^4 - 5w^3 + 5w^2) \\ & = 24w^9 + 54w^8 - 19w^7 + 3w^6 + 110w^5 - 40w^4 \end{aligned}$$

$$\begin{aligned} 4. & (5r^3 + 5r^2)(9r^5 + 4r^4 - 8r^3)(2r^2 + 5r + 1) \\ & = 90r^{10} + 355r^9 + 330r^8 - 115r^7 - 220r^6 - 40r^5 \end{aligned}$$

$$\begin{aligned} 5. & (4p^4 + 4p^3)(8p^2 - 7p + 7)(2p^5 - 8p^4 + 4p^3) \\ & = 64p^{11} - 248p^{10} + 96p^9 + 72p^8 - 224p^7 + 112p^6 \end{aligned}$$