

Multiplying Three Trinomials (I)

Simplify each expression.

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

2. $(5z^2 + 3z + 5)(6z^5 + 2z^4 - 6z^3)(-3z^2 - 8z + 1)$

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

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

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

Multiplying Three Trinomials (I) Answers

Simplify each expression.

$$\begin{aligned} 1. & (-3m^5 + 4m^4 + 3m^3)(2m^2 - 7m + 5)(-9m^3 + m^2 - 5m) \\ & = 54m^{10} - 267m^9 + 392m^8 - 173m^7 + 49m^6 + 20m^5 - 75m^4 \end{aligned}$$

$$\begin{aligned} 2. & (5z^2 + 3z + 5)(6z^5 + 2z^4 - 6z^3)(-3z^2 - 8z + 1) \\ & = -90z^9 - 324z^8 - 212z^7 + 4z^6 + 160z^5 + 232z^4 - 30z^3 \end{aligned}$$

$$\begin{aligned} 3. & (-4a^3 + 5a^2 + 5a)(2a^3 - 7a^2 + 9a)(-6a^2 + 5a + 2) \\ & = 48a^8 - 268a^7 + 540a^6 - 289a^5 - 342a^4 + 245a^3 + 90a^2 \end{aligned}$$

$$\begin{aligned} 4. & (a^4 - 8a^3 + 7a^2)(-6a^2 - 4a + 5)(6a^3 + 9a^2 - 8a) \\ & = -36a^9 + 210a^8 + 414a^7 - 805a^6 - 362a^5 + 859a^4 - 280a^3 \end{aligned}$$

$$\begin{aligned} 5. & (-8y^5 - y^4 - 8y^3)(-y^5 + 3y^4 + 6y^3)(9y^2 - 9y - 3) \\ & = 72y^{12} - 279y^{11} - 204y^{10} + 186y^9 - 33y^8 + 522y^7 + 144y^6 \end{aligned}$$