

Multiplying Three Mon/Polynomials (I)

Simplify each expression.

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

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

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

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

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

Multiplying Three Mon/Polynomials (I) Answers

Simplify each expression.

$$\begin{aligned} 1. & (-5c^2 - c - 9)(-7c^2 - 3c - 5)(-3c^3 - 2c^2 + 9c) \\ & = -105c^7 - 136c^6 - 2c^5 - 80c^4 + 620c^3 + 198c^2 + 405c \end{aligned}$$

$$\begin{aligned} 2. & (5p^5 + 8p^4 + 7p^3)(-7p^4 - 4p^3 + 5p^2)(8p^2 + 4p) \\ & = -280p^{11} - 748p^{10} - 752p^9 - 128p^8 + 328p^7 + 140p^6 \end{aligned}$$

$$\begin{aligned} 3. & -9p^3(9p^4 - 3p^3 - 6p^2)(-p^5 - 4p^4) \\ & = 81p^{12} + 297p^{11} - 162p^{10} - 216p^9 \end{aligned}$$

$$\begin{aligned} 4. & 9b^4(-2b + 7)(-5b^4 + 8b^3) \\ & = 90b^9 - 459b^8 + 504b^7 \end{aligned}$$

$$\begin{aligned} 5. & (-4h^2 - 9h)(-9h^5 + 5h^4 - 6h^3)(8h^4 + 3h^3 - 2h^2) \\ & = 288h^{11} + 596h^{10} - 57h^9 + 247h^8 + 204h^7 - 108h^6 \end{aligned}$$