Multiplying a Binomial by Two Trinomials (G)

Simplify each expression.

1. $(-7n^4 - 6n^3)(6n^3 - n^2 + 8n)(-9n^3 - 4n^2 - 6n)$

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

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

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

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

Multiplying a Binomial by Two Trinomials (G) Answers

Simplify each expression.

1. $(-7n^4 - 6n^3)(6n^3 - n^2 + 8n)(-9n^3 - 4n^2 - 6n)$
$= 378n^{10} + 429n^9 + 818n^8 + 806n^7 + 492n^6 + 288n^5$

2. $(9k + 5)(8k^2 - 8k + 9)(-5k^4 + 7k^3 - 9k^2)$
$= -360k^7 + 664k^6 - 1077k^5 + 350k^4 - 54k^3 - 405k^2$

3. $(3r^2 - 8r)(-7r^3 + 2r^2 - 3r)(-8r^5 + 2r^4 + 7r^3)$
$= 168r^{10} - 538r^9 + 177r^8 + 192r^7 - 127r^6 + 168r^5$

4. $(k^2 - 3k)(2k^5 + 7k^4 + 5k^3)(2k^5 - 8k^4 + 3k^3)$
$= 4k^{12} - 14k^{11} - 34k^{10} + 101k^9 + 72k^8 - 45k^7$

5. $(-4w^5 + 7w^4)(-w^3 - 6w^2 - 9w)(-2w^5 + 4w^4 - 6w^3)$
$= -8w^{13} - 18w^{12} + 56w^{11} - 216w^9 + 378w^8$