

Multiplication de Trois Monômes ou Polynômes Aléatoires (A)

Simplifiez chaque expression.

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

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

3. $3t^3(8t^4 + 3t^3)(-3t^5 + 3t^4)$

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

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

Multiplication de Trois Monômes ou Polynômes Aléatoires

(A) Réponses

Simplifiez chaque expression.

$$\begin{aligned} 1. & (5n^3 - 4n^2 - 5n)(8n^4 + n^3 + 6n^2)(-3n^4 + 3n^3 - 8n^2) \\ & = -120n^{11} + 201n^{10} - 359n^9 + 261n^8 + 115n^7 + 142n^6 + 240n^5 \end{aligned}$$

$$\begin{aligned} 2. & (8v^2 + 8v + 2)(-7v^3 + 5v^2 - 5v)(4v^4 + 8v^3 + 4v^2) \\ & = -224v^9 - 512v^8 - 408v^7 - 296v^6 - 336v^5 - 200v^4 - 40v^3 \end{aligned}$$

$$\begin{aligned} 3. & 3t^3(8t^4 + 3t^3)(-3t^5 + 3t^4) \\ & = -72t^{12} + 45t^{11} + 27t^{10} \end{aligned}$$

$$\begin{aligned} 4. & -4x^3(4x^2 - 6x)(-x^5 + 3x^4) \\ & = 16x^{10} - 72x^9 + 72x^8 \end{aligned}$$

$$\begin{aligned} 5. & (-2p^3 + 8p^2 + 5p)(-8p^2 - 5p - 5)(2p^2 + 8p - 9) \\ & = 32p^7 + 20p^6 - 716p^5 - 204p^4 + 60p^3 + 385p^2 + 225p \end{aligned}$$

Multiplication de Trois Monômes ou Polynômes Aléatoires (B)

Simplifiez chaque expression.

1. $-3h(-5h + 8)(6h - 5)$

2. $(6k^2 - 3k)(-8k^3 + 3k^2)(9k^3 + 3k^2)$

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

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

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

Multiplication de Trois Monômes ou Polynômes Aléatoires

(B) Réponses

Simplifiez chaque expression.

$$\begin{aligned} 1. & -3h(-5h + 8)(6h - 5) \\ & = 90h^3 - 219h^2 + 120h \end{aligned}$$

$$\begin{aligned} 2. & (6k^2 - 3k)(-8k^3 + 3k^2)(9k^3 + 3k^2) \\ & = -432k^8 + 234k^7 + 45k^6 - 27k^5 \end{aligned}$$

$$\begin{aligned} 3. & (-9m^5 + 7m^4 - m^3)(m^4 - 6m^3 - 5m^2)(-m^2 - 3m) \\ & = 9m^{11} - 34m^{10} - 185m^9 + 23m^8 + 82m^7 - 15m^6 \end{aligned}$$

$$\begin{aligned} 4. & (-6z^5 + 4z^4 + 5z^3)(6z^4 - 3z^3)(7z^3 + 6z^2) \\ & = -252z^{12} + 78z^{11} + 378z^{10} + 3z^9 - 90z^8 \end{aligned}$$

$$\begin{aligned} 5. & (r^4 - 4r^3 - 3r^2)(-r^3 + 4r^2 + 7r)(r^3 + 7r^2 - 7r) \\ & = -1r^{10} + 1r^9 + 57r^8 - 138r^7 - 259r^6 + 133r^5 + 147r^4 \end{aligned}$$

Multiplication de Trois Monômes ou Polynômes Aléatoires (C)

Simplifiez chaque expression.

1. $-8v^5(3v^4 + 7v^3 + 4v^2)(-4v^5 - 2v^4 - 6v^3)$

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

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

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

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

Multiplication de Trois Monômes ou Polynômes Aléatoires

(C) Réponses

Simplifiez chaque expression.

$$\begin{aligned} 1. & -8v^5(3v^4 + 7v^3 + 4v^2)(-4v^5 - 2v^4 - 6v^3) \\ & = 96v^{14} + 272v^{13} + 384v^{12} + 400v^{11} + 192v^{10} \end{aligned}$$

$$\begin{aligned} 2. & -8k^4(-9k^3 - 6k^2)(2k^3 + 6k^2) \\ & = 144k^{10} + 528k^9 + 288k^8 \end{aligned}$$

$$\begin{aligned} 3. & 4a^3(-4a^3 + 4a^2 - 6a)(5a^3 - 9a^2 + 3a) \\ & = -80a^9 + 224a^8 - 312a^7 + 264a^6 - 72a^5 \end{aligned}$$

$$\begin{aligned} 4. & (-3v^5 - v^4 + 9v^3)(-8v^5 + 9v^4 + 3v^3)(7v^2 - 9v - 6) \\ & = 168v^{12} - 349v^{11} - 603v^{10} + 1470v^9 + 27v^8 - 711v^7 - 162v^6 \end{aligned}$$

$$\begin{aligned} 5. & (5x^2 - x + 3)(-8x^4 - 4x^3 + 2x^2)(9x^5 - x^4 - 5x^3) \\ & = -360x^{11} - 68x^{10} + 122x^9 - 56x^8 + 118x^7 + 64x^6 - 30x^5 \end{aligned}$$

Multiplication de Trois Monômes ou Polynômes Aléatoires (D)

Simplifiez chaque expression.

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

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

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

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

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

Multiplication de Trois Monômes ou Polynômes Aléatoires

(D) Réponses

Simplifiez chaque expression.

$$\begin{aligned} 1. & (-9t - 7)(-4t^2 - 5t)(-5t^3 + 3t^2) \\ & = -180t^6 - 257t^5 + 44t^4 + 105t^3 \end{aligned}$$

$$\begin{aligned} 2. & (2y^5 - y^4)(-6y^2 - 8y)(5y^5 - y^4) \\ & = -60y^{12} - 38y^{11} + 50y^{10} - 8y^9 \end{aligned}$$

$$\begin{aligned} 3. & (-5y^4 - 8y^3)(-3y^4 - y^3 - 3y^2)(9y^5 - 2y^4) \\ & = 135y^{13} + 231y^{12} + 149y^{11} + 170y^{10} - 48y^9 \end{aligned}$$

$$\begin{aligned} 4. & (2d + 9)(9d^4 - 3d^3)(-3d^2 + 2d - 6) \\ & = -54d^7 - 189d^6 + 123d^5 - 504d^4 + 162d^3 \end{aligned}$$

$$\begin{aligned} 5. & 2d^4(6d^2 - 2d - 9)(4d^5 + 8d^4 + 4d^3) \\ & = 48d^{11} + 80d^{10} - 56d^9 - 160d^8 - 72d^7 \end{aligned}$$

Multiplication de Trois Monômes ou Polynômes Aléatoires (E)

Simplifiez chaque expression.

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

2. $(6p^3 - 8p^2)(-6p^3 + 3p^2)(-7p^3 + 4p^2)$

3. $3f^4(7f^4 + f^3 + 3f^2)(f^4 - 7f^3)$

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

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

Multiplication de Trois Monômes ou Polynômes Aléatoires

(E) Réponses

Simplifiez chaque expression.

$$\begin{aligned} 1. & (-9h^3 - 2h^2)(8h^2 + 3h + 7)(-7h^3 + 4h^2 - 7h) \\ & = 504h^8 + 13h^7 + 815h^6 + 123h^5 + 427h^4 + 98h^3 \end{aligned}$$

$$\begin{aligned} 2. & (6p^3 - 8p^2)(-6p^3 + 3p^2)(-7p^3 + 4p^2) \\ & = 252p^9 - 606p^8 + 432p^7 - 96p^6 \end{aligned}$$

$$\begin{aligned} 3. & 3f^4(7f^4 + f^3 + 3f^2)(f^4 - 7f^3) \\ & = 21f^{12} - 144f^{11} - 12f^{10} - 63f^9 \end{aligned}$$

$$\begin{aligned} 4. & -8t(-4t^5 - 4t^4)(-2t^2 + 9t + 7) \\ & = -64t^8 + 224t^7 + 512t^6 + 224t^5 \end{aligned}$$

$$\begin{aligned} 5. & (6x^4 + 7x^3 + 6x^2)(2x^5 - 8x^4)(-8x^2 + 3x) \\ & = -96x^{11} + 308x^{10} + 250x^9 + 252x^8 - 144x^7 \end{aligned}$$

Multiplication de Trois Monômes ou Polynômes Aléatoires (F)

Simplifiez chaque expression.

1. $(4k^4 - 7k^3)(6k - 1)(-2k^5 + 3k^4 + 7k^3)$

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

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

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

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

Multiplication de Trois Monômes ou Polynômes Aléatoires

(F) Réponses

Simplifiez chaque expression.

$$\begin{aligned} 1. & (4k^4 - 7k^3)(6k - 1)(-2k^5 + 3k^4 + 7k^3) \\ & = -48k^{10} + 164k^9 + 16k^8 - 301k^7 + 49k^6 \end{aligned}$$

$$\begin{aligned} 2. & 7h^4(8h^5 + 3h^4)(9h^5 - 7h^4 + h^3) \\ & = 504h^{14} - 203h^{13} - 91h^{12} + 21h^{11} \end{aligned}$$

$$\begin{aligned} 3. & (-3v^2 + 8v - 4)(-9v + 4)(9v^2 - 8v - 6) \\ & = 243v^5 - 972v^4 + 1122v^3 - 184v^2 - 280v + 96 \end{aligned}$$

$$\begin{aligned} 4. & (w^3 + w^2 + 5w)(7w^4 + w^3 + 7w^2)(-6w^5 - 6w^4) \\ & = -42w^{12} - 90w^{11} - 306w^{10} - 330w^9 - 282w^8 - 210w^7 \end{aligned}$$

$$\begin{aligned} 5. & (-9q^4 - 9q^3 + 6q^2)(9q^2 + 6q + 4)(-9q^3 + 2q^2 + q) \\ & = 729q^9 + 1053q^8 - 27q^7 - 207q^6 - 252q^5 + 48q^4 + 24q^3 \end{aligned}$$

Multiplication de Trois Monômes ou Polynômes Aléatoires (G)

Simplifiez chaque expression.

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

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

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

4. $-8g^4(-g^3 + g^2)(-4g^4 - 8g^3)$

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

Multiplication de Trois Monômes ou Polynômes Aléatoires

(G) Réponses

Simplifiez chaque expression.

$$\begin{aligned} 1. & (p^3 - 5p^2 + 8p)(-4p^2 + 2p - 7)(p^2 + p - 2) \\ & = -4p^7 + 18p^6 - 19p^5 - 42p^4 + 93p^3 - 158p^2 + 112p \end{aligned}$$

$$\begin{aligned} 2. & (-m^4 + 9m^3 + 5m^2)(-8m^3 - 6m^2)(-9m^4 + 8m^3) \\ & = -72m^{11} + 658m^{10} + 318m^9 - 482m^8 - 240m^7 \end{aligned}$$

$$\begin{aligned} 3. & (9y - 6)(4y^2 - 4y)(-7y^3 + 8y^2) \\ & = -252y^6 + 708y^5 - 648y^4 + 192y^3 \end{aligned}$$

$$\begin{aligned} 4. & -8g^4(-g^3 + g^2)(-4g^4 - 8g^3) \\ & = -32g^{11} - 32g^{10} + 64g^9 \end{aligned}$$

$$\begin{aligned} 5. & (-5g^4 + 6g^3 - 5g^2)(-5g^2 + 9g + 5)(6g^2 + 7g + 9) \\ & = 150g^8 - 275g^7 + 24g^6 - 387g^5 + 231g^4 - 310g^3 - 225g^2 \end{aligned}$$

Multiplication de Trois Monômes ou Polynômes Aléatoires (H)

Simplifiez chaque expression.

1. $(9c^3 - 9c^2 - 7c)(-5c^5 - 7c^4)(-8c^4 + 2c^3 + 9c^2)$

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

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

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

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

Multiplication de Trois Monômes ou Polynômes Aléatoires

(H) Réponses

Simplifiez chaque expression.

$$\begin{aligned} 1. & (9c^3 - 9c^2 - 7c)(-5c^5 - 7c^4)(-8c^4 + 2c^3 + 9c^2) \\ & = 360c^{12} + 54c^{11} - 1225c^{10} - 358c^9 + 980c^8 + 441c^7 \end{aligned}$$

$$\begin{aligned} 2. & (b^4 - 2b^3 - 3b^2)(-4b^4 + 6b^3 - 3b^2)(-6b^3 + 9b^2 - 9b) \\ & = 24b^{11} - 120b^{10} + 180b^9 - 81b^8 - 135b^7 + 189b^6 - 81b^5 \end{aligned}$$

$$\begin{aligned} 3. & (9a^3 - 6a^2)(a^4 - 5a^3 + 5a^2)(-a^5 + 3a^4) \\ & = -9a^{12} + 78a^{11} - 228a^{10} + 255a^9 - 90a^8 \end{aligned}$$

$$\begin{aligned} 4. & (-7m^4 + 2m^3 - 7m^2)(m^3 + 7m^2 + 3m)(-6m^3 - 5m^2) \\ & = 42m^{10} + 317m^9 + 319m^8 + 328m^7 + 341m^6 + 105m^5 \end{aligned}$$

$$\begin{aligned} 5. & (2y^3 + 5y^2)(-4y^4 - 2y^3 + 6y^2)(4y^3 + 8y^2) \\ & = -32y^{10} - 160y^9 - 184y^8 + 136y^7 + 240y^6 \end{aligned}$$

Multiplication de Trois Monômes ou Polynômes Aléatoires (I)

Simplifiez chaque expression.

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

2. $(-9g^2 - 8g)(-g^4 - 3g^3)(5g^4 - 9g^3)$

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

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

5. $8q^3(5q^5 + 8q^4 + 3q^3)(2q^4 + 3q^3)$

Multiplication de Trois Monômes ou Polynômes Aléatoires

(I) Réponses

Simplifiez chaque expression.

$$\begin{aligned} 1. & (9b^3 - 7b^2)(9b^2 - 6b + 4)(-6b^3 + 7b^2 - 6b) \\ & = -486b^8 + 1269b^7 - 1773b^6 + 1416b^5 - 664b^4 + 168b^3 \end{aligned}$$

$$\begin{aligned} 2. & (-9g^2 - 8g)(-g^4 - 3g^3)(5g^4 - 9g^3) \\ & = 45g^{10} + 94g^9 - 195g^8 - 216g^7 \end{aligned}$$

$$\begin{aligned} 3. & (-2q^2 + 6q)(9q^4 - 4q^3 - 3q^2)(-9q^5 + 8q^4 + 3q^3) \\ & = 162q^{11} - 702q^{10} + 604q^9 + 204q^8 - 198q^7 - 54q^6 \end{aligned}$$

$$\begin{aligned} 4. & 9m^5(9m^5 + 4m^4 + 7m^3)(m + 7) \\ & = 81m^{11} + 603m^{10} + 315m^9 + 441m^8 \end{aligned}$$

$$\begin{aligned} 5. & 8q^3(5q^5 + 8q^4 + 3q^3)(2q^4 + 3q^3) \\ & = 80q^{12} + 248q^{11} + 240q^{10} + 72q^9 \end{aligned}$$

Multiplication de Trois Monômes ou Polynômes Aléatoires (J)

Simplifiez chaque expression.

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

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

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

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

5. $-5b^2(-7b - 1)(-4b^4 + 6b^3 - 8b^2)$

Multiplication de Trois Monômes ou Polynômes Aléatoires

(J) Réponses

Simplifiez chaque expression.

$$\begin{aligned} 1. & (5a^4 + 5a^3)(-a - 2)(3a^4 + 7a^3) \\ & = -15a^9 - 80a^8 - 135a^7 - 70a^6 \end{aligned}$$

$$\begin{aligned} 2. & 5k^2(-2k^4 - 3k^3 - 4k^2)(2k^4 + 6k^3) \\ & = -20k^{10} - 90k^9 - 130k^8 - 120k^7 \end{aligned}$$

$$\begin{aligned} 3. & -8k^3(4k - 9)(8k^3 - 9k^2) \\ & = -256k^7 + 864k^6 - 648k^5 \end{aligned}$$

$$\begin{aligned} 4. & (4v^2 + 2v + 6)(-8v^2 - 6v - 3)(-3v^5 + 5v^4) \\ & = 96v^9 - 40v^8 + 16v^7 - 234v^6 - 156v^5 - 90v^4 \end{aligned}$$

$$\begin{aligned} 5. & -5b^2(-7b - 1)(-4b^4 + 6b^3 - 8b^2) \\ & = -140b^7 + 190b^6 - 250b^5 - 40b^4 \end{aligned}$$