

## Multiplication de Trois Trinômes (A)

Simplifiez chaque expression.

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

$$2. (2q^3 + 3q^2 + 8q)(-2q^5 - 3q^4 - 6q^3)(9q^2 + 9q + 1)$$

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

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

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

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

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

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

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

$$10. (-3z^3 + z^2 + 2z)(2z^4 - 2z^3 - 4z^2)(6z^4 + 9z^3 - 8z^2)$$

# Multiplication de Trois Trinômes (A) Réponses

Simplifiez chaque expression.

$$1. (-3r^4 + 4r^3 - 2r^2)(6r^4 + 3r^3 + 7r^2)(-2r^4 - 7r^3 + 9r^2)$$
$$= 36r^{12} + 96r^{11} - 225r^{10} + 238r^9 - 315r^8 + 296r^7 - 126r^6$$

$$2. (2q^3 + 3q^2 + 8q)(-2q^5 - 3q^4 - 6q^3)(9q^2 + 9q + 1)$$
$$= -36q^{10} - 144q^9 - 445q^8 - 723q^7 - 847q^6 - 474q^5 - 48q^4$$

$$3. (3m^3 + 2m^2 + m)(-9m^5 - 9m^4 + 6m^3)(5m^4 + 8m^3 - 4m^2)$$
$$= -135m^{12} - 441m^{11} - 297m^{10} + 123m^9 + 90m^8 + 36m^7 - 24m^6$$

$$4. (n^5 - 7n^4 - 7n^3)(8n^5 + 7n^4 - 4n^3)(3n^4 + 2n^3 - 8n^2)$$
$$= 24n^{14} - 131n^{13} - 489n^{12} + 111n^{11} + 914n^{10} + 224n^9 - 224n^8$$

$$5. (q^4 - 5q^3 - 8q^2)(5q^3 + 5q^2 - 2q)(-8q^5 + 4q^4 + 6q^3)$$
$$= -40q^{12} + 180q^{11} + 486q^{10} - 148q^9 - 650q^8 - 116q^7 + 96q^6$$

$$6. (-7z^5 + 8z^4 - 7z^3)(-z^2 - 5z - 7)(-6z^5 - 9z^4 - 9z^3)$$
$$= -42z^{12} - 225z^{11} - 402z^{10} - 261z^9 - 249z^8 - 252z^7 - 441z^6$$

$$7. (-b^2 - b + 1)(7b^4 - 8b^3 - 9b^2)(4b^2 + 3b - 4)$$
$$= -28b^8 - 17b^7 + 127b^6 + 72b^5 - 129b^4 - 31b^3 + 36b^2$$

$$8. (-5f^3 - 8f^2 + 5f)(-3f^4 + f^3 - 8f^2)(-6f^4 - 2f^3 + 2f^2)$$
$$= -90f^{11} - 144f^{10} - 110f^9 - 410f^8 + 136f^7 + 218f^6 - 80f^5$$

$$9. (7t^4 + 7t^3 + 5t^2)(-t^3 + t^2 + 5t)(7t^5 + 3t^4 + 8t^3)$$
$$= -49t^{12} - 21t^{11} + 203t^{10} + 391t^9 + 591t^8 + 395t^7 + 200t^6$$

$$10. (-3z^3 + z^2 + 2z)(2z^4 - 2z^3 - 4z^2)(6z^4 + 9z^3 - 8z^2)$$
$$= -36z^{11} - 6z^{10} + 204z^9 + 14z^8 - 232z^7 - 8z^6 + 64z^5$$

## Multiplication de Trois Trinômes (B)

Simplifiez chaque expression.

$$1. (v^2 + 2v + 2)(v^2 - 9v - 6)(-9v^2 - 8v - 4)$$

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

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

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

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

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

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

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

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

$$10. (-9m^5 + 6m^4 - 2m^3)(-3m^4 - 2m^3 - 2m^2)(-9m^5 + 6m^4 - 7m^3)$$

## Multiplication de Trois Trinômes (B) Réponses

Simplifiez chaque expression.

$$1. (v^2 + 2v + 2)(v^2 - 9v - 6)(-9v^2 - 8v - 4)$$
$$= -9v^6 + 55v^5 + 250v^4 + 474v^3 + 436v^2 + 216v + 48$$

$$2. (3x^4 + 3x^3 + 2x^2)(5x^2 + 4x - 2)(-5x^4 + 4x^3 + 6x^2)$$
$$= -75x^{10} - 75x^9 + 118x^8 + 216x^7 + 124x^6 - 4x^5 - 24x^4$$

$$3. (5p^3 - 6p^2 + 7p)(7p^4 - p^3 + 6p^2)(6p^2 + 7p + 7)$$
$$= 210p^9 - 37p^8 + 426p^7 + 8p^6 + 546p^5 - 7p^4 + 294p^3$$

$$4. (-3z^4 - 3z^3 - 3z^2)(6z^2 - 6z + 3)(-2z^5 - 9z^4 + 5z^3)$$
$$= 36z^{11} + 162z^{10} - 72z^9 + 63z^8 - 108z^7 + 126z^6 - 45z^5$$

$$5. (3t^2 + 8t + 2)(9t^4 + 9t^3 + 2t^2)(2t^2 - 9t + 5)$$
$$= 54t^8 - 45t^7 - 564t^6 - 301t^5 + 182t^4 + 134t^3 + 20t^2$$

$$6. (4r^5 + 8r^4 - 2r^3)(-5r^3 - r^2 - 4r)(-6r^5 + 9r^4 - 8r^3)$$
$$= 120r^{13} + 84r^{12} - 152r^{11} + 406r^{10} - 206r^9 + 312r^8 - 64r^7$$

$$7. (7m^4 + 8m^3 - 2m^2)(5m^2 - 7m + 3)(3m^4 - 5m^3 - 6m^2)$$
$$= 105m^{10} - 202m^9 - 300m^8 + 393m^7 + 62m^6 - 198m^5 + 36m^4$$

$$8. (6a^3 + 9a^2 + 6a)(a^3 + a^2 - 9a)(a^5 + 8a^4 + 9a^3)$$
$$= 6a^{11} + 63a^{10} + 135a^9 - 252a^8 - 1005a^7 - 1107a^6 - 486a^5$$

$$9. (4w^5 - 9w^4 - 7w^3)(-4w^5 + 6w^4 - 2w^3)(-7w^5 - 6w^4 - 3w^3)$$
$$= 112w^{15} - 324w^{14} - 74w^{13} + 192w^{12} + 148w^{11} - 12w^{10} - 42w^9$$

$$10. (-9m^5 + 6m^4 - 2m^3)(-3m^4 - 2m^3 - 2m^2)(-9m^5 + 6m^4 - 7m^3)$$
$$= -243m^{14} + 162m^{13} - 297m^{12} + 144m^{11} - 168m^{10} + 80m^9 - 28m^8$$

## Multiplication de Trois Trinômes (C)

Simplifiez chaque expression.

$$1. (5z^3 - 2z^2 - 7z)(7z^3 + 6z^2 - 3z)(-9z^4 - 7z^3 - z^2)$$

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

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

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

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

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

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

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

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

$$10. (-y^3 + 7y^2 + y)(-9y^4 + 5y^3 - 8y^2)(-y^5 + 2y^4 - 5y^3)$$

## Multiplication de Trois Trinômes (C) Réponses

Simplifiez chaque expression.

$$1. (5z^3 - 2z^2 - 7z)(7z^3 + 6z^2 - 3z)(-9z^4 - 7z^3 - z^2)$$
$$= -315z^{10} - 389z^9 + 537z^8 + 840z^7 + 139z^6 - 111z^5 - 21z^4$$

$$2. (-7t^3 - t^2 + 8t)(3t^2 - 4t + 1)(8t^5 + 8t^4 + 2t^3)$$
$$= -168t^{10} + 32t^9 + 326t^8 - 46t^7 - 158t^6 - 2t^5 + 16t^4$$

$$3. (4y^4 - 4y^3 + 5y^2)(-3y^5 + 2y^4 + 6y^3)(-7y^4 - 7y^3 - 6y^2)$$
$$= 84y^{13} - 56y^{12} - 75y^{11} - 29y^{10} - 118y^9 - 126y^8 - 180y^7$$

$$4. (-8z^3 + 4z^2 - 5z)(-z^2 + 3z + 4)(-2z^2 - 4z + 3)$$
$$= -16z^7 + 24z^6 + 166z^5 - 26z^4 - 9z^3 + 83z^2 - 60z$$

$$5. (8a^3 - 4a^2 - 4a)(-6a^5 + 3a^4 - 6a^3)(-4a^3 + 9a^2 + 4a)$$
$$= 192a^{11} - 624a^{10} + 384a^9 - 180a^8 - 132a^7 + 264a^6 + 96a^5$$

$$6. (9s^4 + 9s^3 - 8s^2)(-3s^3 + s^2 + 5s)(7s^2 + 3s + 4)$$
$$= -189s^9 - 207s^8 + 384s^7 + 421s^6 + 143s^5 + 28s^4 - 160s^3$$

$$7. (-t^5 - 4t^4 - 6t^3)(-5t^5 - 9t^4 + 7t^3)(3t^4 - 3t^3 - 3t^2)$$
$$= 15t^{14} + 72t^{13} + 75t^{12} - 186t^{11} - 381t^{10} + 48t^9 + 126t^8$$

$$8. (-n^4 - 4n^3 - 3n^2)(7n^4 - n^3 - 4n^2)(8n^5 + 6n^4 - 8n^3)$$
$$= -56n^{13} - 258n^{12} - 210n^{11} + 290n^{10} + 314n^9 - 80n^8 - 96n^7$$

$$9. (2q^4 - 6q^3 - 6q^2)(5q^3 - 6q^2 + 8q)(-3q^3 - 3q^2 - q)$$
$$= -30q^{10} + 96q^9 + 50q^8 + 12q^7 + 158q^6 + 156q^5 + 48q^4$$

$$10. (-y^3 + 7y^2 + y)(-9y^4 + 5y^3 - 8y^2)(-y^5 + 2y^4 - 5y^3)$$
$$= -9y^{12} + 86y^{11} - 215y^{10} + 459y^9 - 264y^8 + 239y^7 + 40y^6$$

## Multiplication de Trois Trinômes (D)

Simplifiez chaque expression.

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

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

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

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

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

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

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

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

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

$$10. (4x^5 - x^4 - 9x^3)(x^2 - 4x + 6)(-5x^3 - 7x^2 - 9x)$$

## Multiplication de Trois Trinômes (D) Réponses

Simplifiez chaque expression.

$$1. (-7d^3 - 8d^2 + 7d)(-3d^4 - 8d^3 + 4d^2)(-d^5 + 8d^4 - 9d^3)$$
$$= -21d^{12} + 88d^{11} + 436d^{10} - 512d^9 - 867d^8 + 1016d^7 - 252d^6$$

$$2. (-3s^3 - 4s^2 + 4s)(-6s^3 + 7s^2 + 3s)(s^4 - 8s^3 - 9s^2)$$
$$= 18s^{10} - 141s^9 - 247s^8 + 477s^7 + 433s^6 - 240s^5 - 108s^4$$

$$3. (-9z^5 - 5z^4 + 3z^3)(-z^3 + z^2 + 6z)(3z^5 + z^4 + 6z^3)$$
$$= 27z^{13} - 3z^{12} - 136z^{11} - 167z^{10} - 345z^9 - 144z^8 + 108z^7$$

$$4. (6h^2 - 7h - 7)(8h^5 + 9h^4 - 7h^3)(-2h^2 - 5h - 2)$$
$$= -96h^9 - 236h^8 + 236h^7 + 837h^6 + 294h^5 - 217h^4 - 98h^3$$

$$5. (-7b^4 - 8b^3 - 5b^2)(-b^2 + 7b + 6)(-7b^3 + 9b^2 - 5b)$$
$$= -49b^9 + 350b^8 + 247b^7 - 51b^6 - 72b^5 + 145b^4 + 150b^3$$

$$6. (t^3 - 3t^2 - 9t)(5t^2 + 3t + 3)(2t^5 + 3t^4 + 6t^3)$$
$$= 10t^{10} - 9t^9 - 108t^8 - 297t^7 - 468t^6 - 297t^5 - 162t^4$$

$$7. (-9y^3 - 7y^2 - 7y)(-2y^4 - 3y^3 + 2y^2)(4y^4 + 8y^3 - 3y^2)$$
$$= 72y^{11} + 308y^{10} + 342y^9 + 41y^8 - 51y^7 - 133y^6 + 42y^5$$

$$8. (9h^3 + 2h^2 - 7h)(-9h^2 + 9h + 8)(-4h^4 - 7h^3 - 8h^2)$$
$$= 324h^9 + 315h^8 - 405h^7 - 1387h^6 - 671h^5 + 768h^4 + 448h^3$$

$$9. (-4v^2 + 2v + 1)(-5v^4 + 3v^3 - 9v^2)(-8v^3 - 4v^2 + 2v)$$
$$= -160v^9 + 96v^8 - 168v^7 - 72v^6 + 206v^5 + 6v^4 - 18v^3$$

$$10. (4x^5 - x^4 - 9x^3)(x^2 - 4x + 6)(-5x^3 - 7x^2 - 9x)$$
$$= -20x^{10} + 57x^9 - 12x^8 - 130x^7 - 111x^6 + 108x^5 + 486x^4$$

## Multiplication de Trois Trinômes (E)

Simplifiez chaque expression.

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

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

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

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

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

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

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

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

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

$$10. (-c^2 - 9c - 5)(-7c^4 + 6c^3 - 5c^2)(-5c^4 - c^3 + 7c^2)$$

## Multiplication de Trois Trinômes (E) Réponses

Simplifiez chaque expression.

$$1. (9r^2 + 9r + 8)(-2r^5 - 7r^4 + 9r^3)(-2r^4 - 4r^3 + 5r^2)$$
$$= 36r^{11} + 234r^{10} + 230r^9 - 463r^8 - 234r^7 - 163r^6 + 360r^5$$

$$2. (8q^2 + 7q + 5)(-4q^5 - 2q^4 - 3q^3)(2q^4 - 5q^3 - 7q^2)$$
$$= -64q^{11} + 72q^{10} + 328q^9 + 536q^8 + 531q^7 + 292q^6 + 105q^5$$

$$3. (-8f^4 - 4f^3 + 8f^2)(-4f^3 + 4f^2 + 8f)(6f^4 - f^3 + 8f^2)$$
$$= 192f^{11} - 128f^{10} - 400f^9 - 16f^8 - 512f^7 - 64f^6 + 512f^5$$

$$4. (-9d^5 - 3d^4 - 6d^3)(-6d^3 - 2d^2 - 2d)(-9d^3 + 3d^2 - 2d)$$
$$= -486d^{11} - 162d^{10} - 540d^9 - 54d^8 - 174d^7 - 24d^5$$

$$5. (7y^2 + 5y + 8)(-8y^3 - 4y^2 + 2y)(2y^3 + 5y^2 - 5y)$$
$$= -112y^8 - 416y^7 - 200y^6 - 54y^5 + 272y^4 + 190y^3 - 80y^2$$

$$6. (4c^2 + 2c - 9)(7c^5 + 3c^4 + 4c^3)(-2c^5 + 8c^4 - 3c^3)$$
$$= -56c^{12} + 172c^{11} + 206c^{10} - 368c^9 + 43c^8 - 231c^7 + 108c^6$$

$$7. (4c^4 - 3c^3 + 5c^2)(-3c^3 + c^2 + 8c)(7c^4 + c^3 + 7c^2)$$
$$= -84c^{11} + 79c^{10} + 27c^9 - 28c^8 + 359c^7 - 93c^6 + 280c^5$$

$$8. (p^3 - 5p^2 + p)(-7p^4 - 3p^3 + p^2)(-7p^4 + 6p^3 + 7p^2)$$
$$= 49p^{11} - 266p^{10} + 80p^9 + 334p^8 + 8p^7 - 50p^6 + 7p^5$$

$$9. (-2f^2 + 4f - 8)(f^4 - 7f^3 + 5f^2)(9f^3 - 2f^2 - 3f)$$
$$= -18f^9 + 166f^8 - 444f^7 + 722f^6 - 374f^5 - 148f^4 + 120f^3$$

$$10. (-c^2 - 9c - 5)(-7c^4 + 6c^3 - 5c^2)(-5c^4 - c^3 + 7c^2)$$
$$= -35c^{10} - 292c^9 + 62c^8 + 338c^7 - 238c^6 + 80c^5 + 175c^4$$

## Multiplication de Trois Trinômes (F)

Simplifiez chaque expression.

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

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

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

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

$$5. (b^4 + 8b^3 - 2b^2)(-8b^2 + 2b + 1)(-6b^4 - 9b^3 + 3b^2)$$

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

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

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

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

$$10. (-2s^3 + 4s^2 - s)(-8s^2 - 8s - 1)(-8s^5 - 3s^4 + 4s^3)$$

## Multiplication de Trois Trinômes (F) Réponses

Simplifiez chaque expression.

$$1. (-s^3 - 9s^2 - 3s)(-s^5 - 2s^4 - 3s^3)(-9s^3 + 9s^2 + 7s)$$
$$= -9s^{11} - 90s^{10} - 110s^9 - 4s^8 + 384s^7 + 312s^6 + 63s^5$$

$$2. (4v^5 + 8v^4 - 6v^3)(-5v^5 + 5v^4 + 8v^3)(4v^5 + 6v^4 - 5v^3)$$
$$= -80v^{15} - 200v^{14} + 388v^{13} + 848v^{12} - 498v^{11} - 458v^{10} + 240v^9$$

$$3. (-7y^3 - y^2 - 8y)(-6y^5 - 7y^4 - 6y^3)(2y^5 + 2y^4 - 5y^3)$$
$$= 84y^{13} + 194y^{12} + 94y^{11} + 43y^{10} - 265y^9 - 214y^8 - 240y^7$$

$$4. (-4g^3 + 2g^2 + 6g)(5g^5 - 2g^4 - g^3)(4g^3 + 2g^2 - 5g)$$
$$= -80g^{11} + 32g^{10} + 256g^9 - 86g^8 - 202g^7 + 58g^6 + 30g^5$$

$$5. (b^4 + 8b^3 - 2b^2)(-8b^2 + 2b + 1)(-6b^4 - 9b^3 + 3b^2)$$
$$= 48b^{10} + 444b^9 + 336b^8 - 507b^7 + 75b^6 + 30b^5 - 6b^4$$

$$6. (7a^5 - 7a^4 - 4a^3)(-7a^2 - 2a - 3)(3a^5 - 5a^4 + a^3)$$
$$= -147a^{12} + 350a^{11} - 161a^{10} + 17a^9 - 88a^8 - 31a^7 + 12a^6$$

$$7. (-5s^3 - 4s^2 + s)(-8s^4 - 4s^3 - 2s^2)(3s^5 + 5s^4 - 5s^3)$$
$$= 120s^{12} + 356s^{11} + 114s^{10} - 158s^9 - 76s^8 - 30s^7 + 10s^6$$

$$8. (2w^2 - w + 9)(-8w^5 - w^4 + 6w^3)(-7w^2 - 9w + 6)$$
$$= 112w^9 + 102w^8 + 263w^7 + 672w^6 - 597w^5 - 576w^4 + 324w^3$$

$$9. (-4y^3 - 4y^2 + 8y)(-y^5 + y^4 - 3y^3)(7y^3 - y^2 - 5y)$$
$$= 28y^{11} - 4y^{10} - 20y^9 + 140y^8 - 188y^7 - 76y^6 + 120y^5$$

$$10. (-2s^3 + 4s^2 - s)(-8s^2 - 8s - 1)(-8s^5 - 3s^4 + 4s^3)$$
$$= -128s^{10} + 80s^9 + 288s^8 - 30s^7 - 108s^6 + 13s^5 + 4s^4$$

## Multiplication de Trois Trinômes (G)

Simplifiez chaque expression.

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

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

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

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

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

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

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

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

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

$$10. (3k^5 - 4k^4 + 3k^3)(-2k^2 - 5k + 8)(8k^4 + 7k^3 - 7k^2)$$

# Multiplication de Trois Trinômes (G) Réponses

Simplifiez chaque expression.

$$1. (-2n^3 - 5n^2 - 5n)(7n^3 + 7n^2 - 3n)(-n^2 - 4n + 1)$$
$$= 14n^8 + 105n^7 + 246n^6 + 227n^5 + 1n^4 - 80n^3 + 15n^2$$

$$2. (3c^3 - 3c^2 - 8c)(6c^2 - 4c + 1)(6c^4 - 5c^3 + 8c^2)$$
$$= 108c^9 - 270c^8 + 96c^7 + 99c^6 - 457c^5 + 272c^4 - 64c^3$$

$$3. (2v^2 - 8v - 3)(-4v^2 + v - 6)(-9v^4 - 6v^3 + 6v^2)$$
$$= 72v^8 - 258v^7 - 180v^6 - 153v^5 - 480v^4 + 162v^3 + 108v^2$$

$$4. (-6f^5 + 6f^4 + 3f^3)(-4f^2 - 8f + 5)(2f^4 - 3f^3 + 5f^2)$$
$$= 48f^{11} - 24f^{10} - 132f^9 + 402f^8 - 438f^7 - 15f^6 + 75f^5$$

$$5. (5q^5 + 9q^4 - 9q^3)(-7q^4 + 7q^3 + 6q^2)(-4q^5 - 6q^4 + 9q^3)$$
$$= 140q^{14} + 322q^{13} - 771q^{12} - 1152q^{11} + 1674q^{10} + 243q^9 - 486q^8$$

$$6. (-2f^4 - 8f^3 - 9f^2)(-8f^2 - 8f + 8)(-3f^5 + 2f^4 - 6f^3)$$
$$= -48f^{11} - 208f^{10} - 296f^9 - 264f^8 - 488f^7 - 192f^6 + 432f^5$$

$$7. (-5p^3 - 8p^2 + 5p)(2p^5 + p^4 + p^3)(4p^4 - 2p^3 + 5p^2)$$
$$= -40p^{12} - 64p^{11} - 20p^{10} - 111p^9 + 11p^8 - 25p^7 + 25p^6$$

$$8. (3s^5 + s^4 + 5s^3)(6s^5 - 6s^4 + 7s^3)(-7s^2 + 6s + 7)$$
$$= -126s^{12} + 192s^{11} - 261s^{10} + 347s^9 - 68s^8 + 49s^7 + 245s^6$$

$$9. (8q^5 - 4q^4 - q^3)(2q^4 - 5q^3 - 8q^2)(2q^2 - 2q - 6)$$
$$= 32q^{11} - 128q^{10} - 92q^9 + 454q^8 + 218q^7 - 238q^6 - 48q^5$$

$$10. (3k^5 - 4k^4 + 3k^3)(-2k^2 - 5k + 8)(8k^4 + 7k^3 - 7k^2)$$
$$= -48k^{11} - 98k^{10} + 297k^9 - 61k^8 - 403k^7 + 497k^6 - 168k^5$$

## Multiplication de Trois Trinômes (H)

Simplifiez chaque expression.

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

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

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

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

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

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

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

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

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

$$10. (-5q^4 - 5q^3 - q^2)(-2q^4 - 5q^3 - 3q^2)(-4q^4 - 2q^3 + 9q^2)$$

## Multiplication de Trois Trinômes (H) Réponses

Simplifiez chaque expression.

$$1. (2z^3 - 4z^2 + 6z)(z^3 + 3z^2 + 6z)(-3z^2 - 6z + 1)$$
$$= -6z^8 - 18z^7 - 28z^6 - 16z^5 - 66z^4 - 222z^3 + 36z^2$$

$$2. (8g^5 + 5g^4 + 4g^3)(9g^3 - 9g^2 + 9g)(-7g^5 - 3g^4 - 9g^3)$$
$$= -504g^{13} - 27g^{12} - 1008g^{11} - 9g^{10} - 846g^9 - 189g^8 - 324g^7$$

$$3. (-6y^4 - 6y^3 + 5y^2)(5y^4 - 5y^3 - 7y^2)(6y^2 - 8y + 1)$$
$$= -180y^{10} + 240y^9 + 552y^8 - 674y^7 - 249y^6 + 297y^5 - 35y^4$$

$$4. (3x^2 + 5x + 5)(8x^3 - x^2 - 2x)(x^2 + 7x + 2)$$
$$= 24x^7 + 205x^6 + 336x^5 + 262x^4 - 57x^3 - 100x^2 - 20x$$

$$5. (8t^2 - 3t - 9)(-6t^4 + 8t^3 + t^2)(t^3 + 4t^2 - 9t)$$
$$= -48t^9 - 110t^8 + 798t^7 - 661t^6 - 651t^5 + 639t^4 + 81t^3$$

$$6. (-7m^4 - 2m^3 - 7m^2)(7m^2 - 2m + 3)(-6m^3 + 7m^2 - 7m)$$
$$= 294m^9 - 343m^8 + 739m^7 - 510m^6 + 644m^5 - 203m^4 + 147m^3$$

$$7. (8s^4 + 9s^3 - 5s^2)(5s^4 + 7s^3 + 7s^2)(s^2 + 7s - 3)$$
$$= 40s^{10} + 381s^9 + 681s^8 + 383s^7 - 121s^6 - 329s^5 + 105s^4$$

$$8. (-4y^3 + 4y^2 + 4y)(-7y^4 + 5y^3 + 2y^2)(-3y^5 - 7y^4 - 4y^3)$$
$$= -84y^{12} - 52y^{11} + 272y^{10} + 220y^9 - 156y^8 - 168y^7 - 32y^6$$

$$9. (-h^3 + 7h^2 - 7h)(-8h^3 - 4h^2 - 2h)(-7h^4 + 7h^3 - 4h^2)$$
$$= -56h^{10} + 420h^9 - 606h^8 + 320h^7 - 120h^6 + 42h^5 - 56h^4$$

$$10. (-5q^4 - 5q^3 - q^2)(-2q^4 - 5q^3 - 3q^2)(-4q^4 - 2q^3 + 9q^2)$$
$$= -40q^{12} - 160q^{11} - 148q^{10} + 151q^9 + 326q^8 + 174q^7 + 27q^6$$

## Multiplication de Trois Trinômes (I)

Simplifiez chaque expression.

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

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

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

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

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

$$6. (-6t^2 - 8t - 1)(-5t^3 - 4t^2 + 7t)(-7t^3 + 9t^2 + 5t)$$

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

$$8. (-5m^5 + 7m^4 - 6m^3)(5m^5 - 9m^4 - 5m^3)(6m^2 - 9m - 1)$$

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

$$10. (-6p^3 + 2p^2 - 9p)(-9p^4 - 4p^3 + 7p^2)(5p^3 - 7p^2 + 6p)$$

## Multiplication de Trois Trinômes (I) Réponses

Simplifiez chaque expression.

$$1. (-r^5 - r^4 + r^3)(6r^5 + 3r^4 - 7r^3)(-6r^4 - 2r^3 - 6r^2)$$
$$= 36r^{14} + 66r^{13} - 6r^{12} - 26r^{11} - 38r^{10} - 46r^9 + 42r^8$$

$$2. (-4v^3 - 2v^2 - 8v)(7v^4 - 6v^3 - 8v^2)(4v^2 + 4v - 8)$$
$$= -112v^9 - 72v^8 + 216v^7 + 128v^6 + 608v^5 - 256v^4 - 512v^3$$

$$3. (-5n^2 - 9n + 2)(-9n^2 + 4n - 2)(-9n^5 - 8n^4 - 5n^3)$$
$$= -405n^9 - 909n^8 - 317n^7 - 187n^6 + 48n^5 - 98n^4 + 20n^3$$

$$4. (-4f^2 + 3f - 3)(2f^2 + 4f + 6)(6f^4 + 6f^3 - 5f^2)$$
$$= -48f^8 - 108f^7 - 128f^6 - 22f^5 + 18f^4 - 138f^3 + 90f^2$$

$$5. (-2p^2 + 8p + 6)(-6p^4 - 4p^3 + 6p^2)(-3p^5 - p^4 + 8p^3)$$
$$= -36p^{11} + 108p^{10} + 376p^9 - 312p^8 - 772p^7 + 156p^6 + 288p^5$$

$$6. (-6t^2 - 8t - 1)(-5t^3 - 4t^2 + 7t)(-7t^3 + 9t^2 + 5t)$$
$$= -210t^8 - 178t^7 + 761t^6 + 639t^5 - 444t^4 - 323t^3 - 35t^2$$

$$7. (2b^5 + 6b^4 - 7b^3)(-2b^4 - 8b^3 - 6b^2)(-b^4 - 8b^3 + 7b^2)$$
$$= 4b^{13} + 60b^{12} + 242b^{11} + 152b^{10} - 524b^9 - 196b^8 + 294b^7$$

$$8. (-5m^5 + 7m^4 - 6m^3)(5m^5 - 9m^4 - 5m^3)(6m^2 - 9m - 1)$$
$$= -150m^{12} + 705m^{11} - 1103m^{10} + 646m^9 + 77m^8 - 289m^7 - 30m^6$$

$$9. (-6p^5 - 8p^4 - p^3)(6p^3 + 5p^2 - 9p)(-6p^3 - 4p^2 - 6p)$$
$$= 216p^{11} + 612p^{10} + 480p^9 + 34p^8 - 370p^7 - 438p^6 - 54p^5$$

$$10. (-6p^3 + 2p^2 - 9p)(-9p^4 - 4p^3 + 7p^2)(5p^3 - 7p^2 + 6p)$$
$$= 270p^{10} - 348p^9 + 437p^8 + 69p^7 - 479p^6 + 741p^5 - 378p^4$$

## Multiplication de Trois Trinômes (J)

Simplifiez chaque expression.

$$1. (-4w^3 + 9w^2 - 2w)(5w^5 - w^4 - 6w^3)(7w^2 + 2w + 5)$$

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

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

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

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

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

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

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

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

$$10. (-3c^2 - 5c - 1)(7c^3 + c^2 + 3c)(7c^5 + 9c^4 + 5c^3)$$

## Multiplication de Trois Trinômes (J) Réponses

Simplifiez chaque expression.

$$1. (-4w^3 + 9w^2 - 2w)(5w^5 - w^4 - 6w^3)(7w^2 + 2w + 5)$$
$$= -140w^{10} + 303w^9 + 33w^8 - 109w^7 + 5w^6 - 236w^5 + 60w^4$$

$$2. (-v^2 - 2v - 5)(-3v^4 + 8v^3 - 3v^2)(-8v^5 - 9v^4 + 2v^3)$$
$$= -24v^{11} - 11v^{10} + 8v^9 + 250v^8 + 190v^7 - 203v^6 + 30v^5$$

$$3. (9q^3 - q^2 - 2q)(-q^3 + 5q^2 + 4q)(3q^3 - 6q^2 - 2q)$$
$$= -27q^9 + 192q^8 - 159q^7 - 332q^6 - 6q^5 + 76q^4 + 16q^3$$

$$4. (3s^5 - 4s^4 + 6s^3)(-2s^2 + 3s - 5)(-3s^5 + 6s^4 + 4s^3)$$
$$= 18s^{12} - 87s^{11} + 195s^{10} - 280s^9 + 162s^8 - 28s^7 - 120s^6$$

$$5. (2x^3 + 2x^2 - 9x)(3x^4 + 9x^3 + 4x^2)(2x^2 + 5x + 5)$$
$$= 12x^9 + 78x^8 + 148x^7 - 31x^6 - 442x^5 - 545x^4 - 180x^3$$

$$6. (8c^5 - c^4 - 7c^3)(9c^3 + 7c^2 + 9c)(-7c^4 - 8c^3 + 8c^2)$$
$$= -504c^{12} - 905c^{11} + 186c^{10} + 766c^9 + 921c^8 + 40c^7 - 504c^6$$

$$7. (b^3 + 6b^2 + 7b)(2b^3 - 8b^2 + 5b)(-2b^5 - 7b^4 - 8b^3)$$
$$= -4b^{11} - 22b^{10} + 14b^9 + 223b^8 + 344b^7 - 37b^6 - 280b^5$$

$$8. (4b^2 - 4b + 1)(-7b^5 - 8b^4 - 3b^3)(-b^4 - b^3 + 7b^2)$$
$$= 28b^{11} + 32b^{10} - 205b^9 - 45b^8 + 90b^7 + 31b^6 - 21b^5$$

$$9. (7s^3 + s^2 - 3s)(-6s^5 - 3s^4 + 4s^3)(9s^5 - 4s^4 + 8s^3)$$
$$= -378s^{13} - 75s^{12} + 159s^{11} - 271s^{10} + 184s^9 + 152s^8 - 96s^7$$

$$10. (-3c^2 - 5c - 1)(7c^3 + c^2 + 3c)(7c^5 + 9c^4 + 5c^3)$$
$$= -147c^{10} - 455c^9 - 594c^8 - 491c^7 - 270c^6 - 107c^5 - 15c^4$$