

**Exercice 1**

Réduire les expressions littérales suivantes :

►1.  $A = 10z^2 - (-4z^2) - (-3) - 5z - (-6z) - 4$

►2.  $B = 9s - 5s^2 - 4 - 2 - 10s^2 + 9s$

►3.  $C = 9 - 10q - 5q^2 + 3q^2 - 7 - (-5q)$

►4.  $D = -10q \times (-9q) \times 4 \times 7 - (-10q^2)$

►5.  $E = -10d \times (-6) \times (-2) + 7d^2 - 6d$

►6.  $F = 7r \times (-4r) + 7r^2 - 10 \times 4$

**Exercice 2**

Réduire les expressions littérales suivantes :

►1.  $A = -7 - 6d - 5d^2 - 10d - 10d^2 + 10$

►2.  $B = 3n - (-4n^2) + 7 + 10 - (-8n) + 4n^2$

►3.  $C = 9 - 3 - 2w - (-w^2) - w^2 + 8w$

►4.  $D = 1 \times 5r \times 8 - (-r^2) - (-8r)$

►5.  $E = 6 \times 10 \times (-7y) - y^2 - 2y$

►6.  $F = -5b^2 - 5b \times (-2) \times (-7b) \times 9$

**Exercice 3**

Réduire les expressions littérales suivantes :

►1.  $A = 6 - 10s - 9s^2 + 1 + 4s^2 - 3s$

►2.  $B = -9f - 2f^2 + 3 - (-f^2) - 10f + 4$

►3.  $C = -10p - 2p^2 - 2p + 1 - 10 - 9p^2$

►4.  $D = 9n^2 - (-4n) \times (-9) \times 6 \times 4n$

►5.  $E = -8d - (-d^2) - (-4) \times 6d \times (-10)$

►6.  $F = -1 \times 5k \times (-10k) + 4k^2 - 8$

**Exercice 4**

Réduire les expressions littérales suivantes :

►1.  $A = -6u + 7u + 7 - 4u^2 - 5 - 3u^2$

►2.  $B = -5w^2 + w^2 - 3w - 6 - 10 - 10w$

►3.  $C = -4c^2 - 2 + 7c^2 - 7c - 4c + 3$

►4.  $D = 8u \times (-7) \times 10 + 7u^2 - u$

►5.  $E = 9 + 5h^2 - (-7h) \times (-7) \times (-2h)$

►6.  $F = -10a + 3a^2 - 2 \times 3a \times (-6)$

**Exercice 5**

Réduire les expressions littérales suivantes :

►1.  $A = 9m^2 + 2m + 9 - 5m - (-8m^2) + 2$

►2.  $B = 5 - 7g - (-3g^2) - 9g + 6g^2 - 1$

►3.  $C = -2c - 7c^2 - (-7c) - 8 - (-5c^2) - 3$

►4.  $D = -7d^2 - 3 \times 7d \times (-4) \times 5d$

►5.  $E = -7 \times (-9y) \times 6 \times (-y) - 7y^2$

►6.  $F = 4q \times (-6) \times 5q \times (-9) - 2q^2$

**Exercice 6**

Réduire les expressions littérales suivantes :

►1.  $A = 2 - 3n + 9 - 10n - (-4n^2) - (-2n^2)$

►2.  $B = -10d^2 + 3d^2 + 1 - (-3d) - (-3d) - 8$

►3.  $C = -10k^2 + 2k - 3 + 10k^2 - 3k - (-5)$

►4.  $D = -6 \times 2 \times (-5z) \times 3z - 4z^2$

►5.  $E = 8h \times 8h \times (-3) + 3h^2 - (-10)$

►6.  $F = -7m \times 3m + 9m^2 - (-1) \times 6$

**Corrigé de l'exercice 1**

Réduire les expressions littérales suivantes :

►1.  $A = 10z^2 - (-4z^2) - (-3) - 5z - (-6z) - 4$

$$A = 10z^2 + 4z^2 + 3 - 5z + 6z - 4$$

$$A = 10z^2 + 4z^2 - 5z + 6z + 3 - 4$$

$$A = (10 + 4) \times z^2 + (-5 + 6) \times z - 1$$

$$A = 14z^2 + z - 1$$

►2.  $B = 9s - 5s^2 - 4 - 2 - 10s^2 + 9s$

$$B = -5s^2 - 10s^2 + 9s + 9s - 4 - 2$$

$$B = (-5 - 10) \times s^2 + (9 + 9) \times s - 6$$

$$B = -15s^2 + 18s - 6$$

►3.  $C = 9 - 10q - 5q^2 + 3q^2 - 7 - (-5q)$

$$C = 9 - 10q + (-5 + 3) \times q^2 - 7 + 5q$$

$$C = 9 - 10q - 2q^2 - 7 + 5q$$

$$C = -2q^2 - 10q + 5q + 9 - 7$$

$$C = -2q^2 + (-10 + 5) \times q + 2$$

$$C = -2q^2 - 5q + 2$$

►4.  $D = -10q \times (-9q) \times 4 \times 7 - (-10q^2)$

$$D = -10 \times (-9) \times 4 \times 7 \times q \times q + 10q^2$$

$$D = 2520q^2 + 10q^2$$

$$D = (2520 + 10) \times q^2$$

$$D = 2530q^2$$

►5.  $E = -10d \times (-6) \times (-2) + 7d^2 - 6d$

$$E = -10 \times (-6) \times (-2) \times d + 7d^2 - 6d$$

$$E = -120d + 7d^2 - 6d$$

$$E = 7d^2 - 120d - 6d$$

$$E = 7d^2 + (-120 - 6) \times d$$

$$E = 7d^2 - 126d$$

►6.  $F = 7r \times (-4r) + 7r^2 - 10 \times 4$

$$F = 7 \times (-4) \times r \times r + 7r^2 - 40$$

$$F = -28r^2 + 7r^2 - 40$$

$$F = (-28 + 7) \times r^2 - 40$$

$$F = -21r^2 - 40$$

**Corrigé de l'exercice 2**

Réduire les expressions littérales suivantes :

►1.  $A = -7 - 6d - 5d^2 - 10d - 10d^2 + 10$

$$A = -5d^2 - 10d^2 - 6d - 10d - 7 + 10$$

$$A = (-5 - 10) \times d^2 + (-6 - 10) \times d + 3$$

$$A = -15d^2 - 16d + 3$$

►2.  $B = 3n - (-4n^2) + 7 + 10 - (-8n) + 4n^2$

$$B = 3n + 4n^2 + 17 + 8n + 4n^2$$

$$B = 4n^2 + 4n^2 + 3n + 8n + 17$$

$$B = (4 + 4) \times n^2 + (3 + 8) \times n + 17$$

$$B = 8n^2 + 11n + 17$$

►3.  $C = 9 - 3 - 2w - (-w^2) - w^2 + 8w$

$$C = -2w + 9 - 3 + w^2 - w^2 + 8w$$

$$C = w^2 - w^2 - 2w + 8w + 9 - 3$$

$$C = (1 - 1) \times w^2 + (-2 + 8) \times w + 6$$

$$C = 0 + 6w + 6$$

$$C = 6w + 6$$

►4.  $D = 1 \times 5r \times 8 - (-r^2) - (-8r)$

$$D = 5 \times 8 \times r + r^2 + 8r$$

$$D = 40r + r^2 + 8r$$

$$D = r^2 + 40r + 8r$$

$$D = r^2 + (40 + 8) \times r$$

$$D = r^2 + 48r$$

►5.  $E = 6 \times 10 \times (-7y) - y^2 - 2y$

$$E = 60 \times (-7) \times y - y^2 - 2y$$

$$E = -420y - y^2 - 2y$$

$$E = -y^2 - 420y - 2y$$

$$E = -y^2 + (-420 - 2) \times y$$

$$E = -y^2 - 422y$$

►6.  $F = -5b^2 - 5b \times (-2) \times (-7b) \times 9$

$$F = -5b^2 - (5 \times (-2) \times (-7) \times 9 \times b \times b)$$

$$F = -5b^2 - 630b^2$$

$$F = (-5 - 630) \times b^2$$

$$F = -635b^2$$

**Corrigé de l'exercice 3**

Réduire les expressions littérales suivantes :

- 1.  $A = 6 - 10s - 9s^2 + 1 + 4s^2 - 3s$   
 $A = -9s^2 + 4s^2 - 10s - 3s + 6 + 1$   
 $A = (-9 + 4) \times s^2 + (-10 - 3) \times s + 7$   
 $A = -5s^2 - 13s + 7$
- 2.  $B = -9f - 2f^2 + 3 - (-f^2) - 10f + 4$   
 $B = -9f - 2f^2 + 3 + f^2 - 10f + 4$   
 $B = -2f^2 + f^2 - 9f - 10f + 3 + 4$   
 $B = (-2 + 1) \times f^2 + (-9 - 10) \times f + 7$   
 $B = -f^2 - 19f + 7$
- 3.  $C = -10p - 2p^2 - 2p + 1 - 10 - 9p^2$   
 $C = -2p^2 - 9p^2 - 10p - 2p + 1 - 10$   
 $C = (-2 - 9) \times p^2 + (-10 - 2) \times p - 9$   
 $C = -11p^2 - 12p - 9$
- 4.  $D = 9n^2 - (-4n) \times (-9) \times 6 \times 4n$   
 $D = 9n^2 - (-4 \times (-9) \times 6 \times 4 \times n \times n)$   
 $D = 9n^2 - 864n^2$   
 $D = (9 - 864) \times n^2$   
 $D = -855n^2$

- 5.  $E = -8d - (-d^2) - (-4) \times 6d \times (-10)$   
 $E = -8d + d^2 - (-4 \times 6 \times (-10) \times d)$   
 $E = -8d + d^2 - 240d$   
 $E = d^2 - 8d - 240d$   
 $E = d^2 + (-8 - 240) \times d$   
 $E = d^2 - 248d$
- 6.  $F = -1 \times 5k \times (-10k) + 4k^2 - 8$   
 $F = -1 \times 5 \times (-10) \times k \times k + 4k^2 - 8$   
 $F = 50k^2 + 4k^2 - 8$   
 $F = (50 + 4) \times k^2 - 8$   
 $F = 54k^2 - 8$

**Corrigé de l'exercice 4**

Réduire les expressions littérales suivantes :

- 1.  $A = -6u + 7u + 7 - 4u^2 - 5 - 3u^2$   
 $A = -4u^2 - 6u + 7u + 7 - 5 - 3u^2$   
 $A = -4u^2 - 3u^2 - 6u + 7u + 7 - 5$   
 $A = (-4 - 3) \times u^2 + (-6 + 7) \times u + 2$   
 $A = -7u^2 + u + 2$
- 2.  $B = -5w^2 + w^2 - 3w - 6 - 10 - 10w$   
 $B = (-5 + 1) \times w^2 - 3w - 6 - 10 - 10w$   
 $B = -4w^2 - 3w - 10w - 6 - 10$   
 $B = -4w^2 + (-3 - 10) \times w - 16$   
 $B = -4w^2 - 13w - 16$
- 3.  $C = -4c^2 - 2 + 7c^2 - 7c - 4c + 3$   
 $C = -4c^2 + 7c^2 - 2 - 7c - 4c + 3$   
 $C = -4c^2 + 7c^2 - 7c - 4c - 2 + 3$   
 $C = (-4 + 7) \times c^2 + (-7 - 4) \times c + 1$   
 $C = 3c^2 - 11c + 1$
- 4.  $D = 8u \times (-7) \times 10 + 7u^2 - u$   
 $D = 8 \times (-7) \times 10 \times u + 7u^2 - u$   
 $D = -560u + 7u^2 - u$   
 $D = 7u^2 - 560u - u$   
 $D = 7u^2 + (-560 - 1) \times u$   
 $D = 7u^2 - 561u$
- 5.  $E = 9 + 5h^2 - (-7h) \times (-7) \times (-2h)$   
 $E = 9 + 5h^2 - (-7 \times (-7) \times (-2) \times h \times h)$   
 $E = 9 + 5h^2 - (-98h^2)$   
 $E = 9 + 5h^2 + 98h^2$   
 $E = 5h^2 + 98h^2 + 9$   
 $E = (5 + 98) \times h^2 + 9$   
 $E = 103h^2 + 9$

$$\begin{aligned} \blacktriangleright 6. \quad F &= -10a + 3a^2 - 2 \times 3a \times (-6) \\ F &= -10a + 3a^2 - 2 \times 3 \times (-6) \times a \\ F &= -10a + 3a^2 - (-36a) \\ F &= -10a + 3a^2 + 36a \end{aligned}$$

$$\begin{aligned} F &= 3a^2 - 10a + 36a \\ F &= 3a^2 + (-10 + 36) \times a \\ F &= 3a^2 + 26a \end{aligned}$$

### Corrigé de l'exercice 5

Réduire les expressions littérales suivantes :

$$\begin{aligned} \blacktriangleright 1. \quad A &= 9m^2 + 2m + 9 - 5m - (-8m^2) + 2 \\ A &= 9m^2 + 2m - 5m + 9 + 8m^2 + 2 \\ A &= 9m^2 + 8m^2 + 2m - 5m + 9 + 2 \\ A &= (9 + 8) \times m^2 + (2 - 5) \times m + 11 \\ A &= 17m^2 - 3m + 11 \end{aligned}$$

$$\begin{aligned} \blacktriangleright 2. \quad B &= 5 - 7g - (-3g^2) - 9g + 6g^2 - 1 \\ B &= 5 - 7g + 3g^2 - 9g + 6g^2 - 1 \\ B &= 3g^2 + 6g^2 - 7g - 9g + 5 - 1 \\ B &= (3 + 6) \times g^2 + (-7 - 9) \times g + 4 \\ B &= 9g^2 - 16g + 4 \end{aligned}$$

$$\begin{aligned} \blacktriangleright 3. \quad C &= -2c - 7c^2 - (-7c) - 8 - (-5c^2) - 3 \\ C &= -2c - 7c^2 + 7c - 8 + 5c^2 - 3 \\ C &= -7c^2 + 5c^2 - 2c + 7c - 8 - 3 \\ C &= (-7 + 5) \times c^2 + (-2 + 7) \times c - 11 \\ C &= -2c^2 + 5c - 11 \end{aligned}$$

$$\begin{aligned} \blacktriangleright 4. \quad D &= -7d^2 - 3 \times 7d \times (-4) \times 5d \\ D &= -7d^2 - 3 \times 7 \times (-4) \times 5 \times d \times d \\ D &= -7d^2 - (-420d^2) \\ D &= -7d^2 + 420d^2 \\ D &= (-7 + 420) \times d^2 \\ D &= 413d^2 \end{aligned}$$

$$\begin{aligned} \blacktriangleright 5. \quad E &= -7 \times (-9y) \times 6 \times (-y) - 7y^2 \\ E &= -7 \times (-9) \times 6 \times (-1) \times y \times y - 7y^2 \\ E &= -378y^2 - 7y^2 \\ E &= (-378 - 7) \times y^2 \\ E &= -385y^2 \end{aligned}$$

$$\begin{aligned} \blacktriangleright 6. \quad F &= 4q \times (-6) \times 5q \times (-9) - 2q^2 \\ F &= 4 \times (-6) \times 5 \times (-9) \times q \times q - 2q^2 \\ F &= 1080q^2 - 2q^2 \\ F &= (1080 - 2) \times q^2 \\ F &= 1078q^2 \end{aligned}$$

### Corrigé de l'exercice 6

Réduire les expressions littérales suivantes :

$$\begin{aligned} \blacktriangleright 1. \quad A &= 2 - 3n + 9 - 10n - (-4n^2) - (-2n^2) \\ A &= 2 - 3n + 9 - 10n + 4n^2 + 2n^2 \\ A &= 4n^2 + 2n^2 - 3n - 10n + 2 + 9 \\ A &= (4 + 2) \times n^2 + (-3 - 10) \times n + 11 \\ A &= 6n^2 - 13n + 11 \end{aligned}$$

$$\begin{aligned} \blacktriangleright 2. \quad B &= -10d^2 + 3d^2 + 1 - (-3d) - (-3d) - 8 \\ B &= (-10 + 3) \times d^2 + 1 + 3d + 3d - 8 \\ B &= -7d^2 + 3d + 3d + 1 - 8 \end{aligned}$$

$$\begin{aligned} B &= -7d^2 + (3 + 3) \times d - 7 \\ B &= -7d^2 + 6d - 7 \end{aligned}$$

$$\begin{aligned} \blacktriangleright 3. \quad C &= -10k^2 + 2k - 3 + 10k^2 - 3k - (-5) \\ C &= -10k^2 + 2k - 3 + 10k^2 - 3k + 5 \\ C &= -10k^2 + 10k^2 + 2k - 3k - 3 + 5 \\ C &= (-10 + 10) \times k^2 + (2 - 3) \times k + 2 \\ C &= 0 - k + 2 \\ C &= -k + 2 \end{aligned}$$

$$\blacktriangleright 4. D = -6 \times 2 \times (-5z) \times 3z - 4z^2$$

$$D = -12 \times (-5) \times 3 \times z \times z - 4z^2$$

$$D = 180z^2 - 4z^2$$

$$D = (180 - 4) \times z^2$$

$$D = 176z^2$$

$$\blacktriangleright 5. E = 8h \times 8h \times (-3) + 3h^2 - (-10)$$

$$E = 8 \times 8 \times (-3) \times h \times h + 3h^2 + 10$$

$$E = -192h^2 + 3h^2 + 10$$

$$E = (-192 + 3) \times h^2 + 10$$

$$E = -189h^2 + 10$$

$$\blacktriangleright 6. F = -7m \times 3m + 9m^2 - (-1) \times 6$$

$$F = -7 \times 3 \times m \times m + 9m^2 - (-6)$$

$$F = -21m^2 + 9m^2 + 6$$

$$F = (-21 + 9) \times m^2 + 6$$

$$F = -12m^2 + 6$$