

**Exercice 1**

Réduire les expressions littérales suivantes :

▶1.  $A = -10y^2 - 8 - 8y - (-y^2) - 7y - (-7)$

▶2.  $B = -9d^2 - 6d + 8d^2 - 9d - 5 + 8$

▶3.  $C = -5d - 3d^2 - 3d^2 + 2 - 5 - 2d$

▶4.  $D = 4g \times 5 \times (-8g) - 10g^2 - 9$

▶5.  $E = -6q^2 - (-6) \times 6q \times (-3) \times (-7q)$

▶6.  $F = -3f^2 - (-10f) \times 10f \times (-4) \times (-6)$

**Exercice 2**

Réduire les expressions littérales suivantes :

▶1.  $A = 2 - g^2 - 5 + 10g^2 - 2g + 6g$

▶2.  $B = 6 - (-6c) - (-10) - 10c + 9c^2 - (-6c^2)$

▶3.  $C = 8 - (-8z^2) - 3z - 10 - (-7z^2) + 3z$

▶4.  $D = -5 \times w \times (-5) + 10w^2 - (-2w)$

▶5.  $E = -7k - 6k^2 - 6 \times (-3) \times 9k$

▶6.  $F = h^2 - 10h \times 3h \times (-4) \times (-9)$

**Exercice 3**

Réduire les expressions littérales suivantes :

▶1.  $A = 6x^2 - 9 - (-3x^2) - (-4x) - 5x + 1$

▶2.  $B = -9 + 5a^2 - a^2 - 5a - (-6) - 8a$

▶3.  $C = -1 + 2h + 4h^2 - (-6) - 7h^2 - 5h$

▶4.  $D = n \times 10n \times (-8) \times 10 + 10n^2$

▶5.  $E = 2m \times (-4m) - 9m^2 - 4 \times 10$

▶6.  $F = -4f^2 + 9f \times (-4) \times (-6) \times 6f$

**Exercice 4**

Réduire les expressions littérales suivantes :

▶1.  $A = -8 - (-6q) - 2 - (-10q^2) + 2q - 9q^2$

▶2.  $B = -2a + 5a^2 - (-5a^2) - 9 - (-3) - 6a$

▶3.  $C = 6a^2 - (-5a) - (-6) - a - 6 + 4a^2$

▶4.  $D = -9k^2 - (-4) \times (-3k) \times 6k \times (-1)$

▶5.  $E = -2 \times (-6) \times 3s \times (-3s) - 4s^2$

▶6.  $F = -3d \times 10 \times 2 - (-3d^2) - 5d$

**Exercice 5**

Réduire les expressions littérales suivantes :

▶1.  $A = -4m - 1 - 1 - 4m + 3m^2 - 5m^2$

▶2.  $B = 4n + 9n^2 - 4n^2 - n - (-2) - (-2)$

▶3.  $C = 6p - 6p^2 - 2p^2 + 2 - 4p - 1$

▶4.  $D = 4 \times 8x \times (-9) - 3x^2 - 9x$

▶5.  $E = -10x^2 - (-8x) \times 1 \times 9x \times 8$

▶6.  $F = -10p \times p - 2p^2 + 7 \times 1$

**Exercice 6**

Réduire les expressions littérales suivantes :

▶1.  $A = 7 - (-7v^2) - 3v - (-5v) - 4v^2 - 5$

▶2.  $B = t^2 - 8 - 7t - 1 - (-5t) + 7t^2$

▶3.  $C = -7m^2 - 3m - 2m^2 - (-6) + 3 - (-5m)$

▶4.  $D = -7u \times 1 \times 7u \times 4 - (-4u^2)$

▶5.  $E = -3d + 3d^2 + 9d \times (-6) \times 1$

▶6.  $F = 6a \times (-4) \times (-9a) - (-8a^2) - 5$

**Corrigé de l'exercice 1**

Réduire les expressions littérales suivantes :

$$\blacktriangleright 1. A = -10y^2 - 8 - 8y - (-y^2) - 7y - (-7)$$

$$A = -10y^2 - 8 - 8y + y^2 - 7y + 7$$

$$A = -10y^2 + y^2 - 8y - 7y - 8 + 7$$

$$A = (-10 + 1) \times y^2 + (-8 - 7) \times y - 1$$

$$A = -9y^2 - 15y - 1$$

$$\blacktriangleright 2. B = -9d^2 - 6d + 8d^2 - 9d - 5 + 8$$

$$B = -9d^2 + 8d^2 - 6d - 9d - 5 + 8$$

$$B = (-9 + 8) \times d^2 + (-6 - 9) \times d + 3$$

$$B = -d^2 - 15d + 3$$

$$\blacktriangleright 3. C = -5d - 3d^2 - 3d^2 + 2 - 5 - 2d$$

$$C = -3d^2 - 3d^2 - 5d - 2d + 2 - 5$$

$$C = (-3 - 3) \times d^2 + (-5 - 2) \times d - 3$$

$$C = -6d^2 - 7d - 3$$

$$\blacktriangleright 4. D = 4g \times 5 \times (-8g) - 10g^2 - 9$$

$$D = 4 \times 5 \times (-8) \times g \times g - 10g^2 - 9$$

$$D = -160g^2 - 10g^2 - 9$$

$$D = (-160 - 10) \times g^2 - 9$$

$$D = -170g^2 - 9$$

$$\blacktriangleright 5. E = -6q^2 - (-6) \times 6q \times (-3) \times (-7q)$$

$$E = -6q^2 - (-6 \times 6 \times (-3) \times (-7) \times q \times q)$$

$$E = -6q^2 - (-756q^2)$$

$$E = -6q^2 + 756q^2$$

$$E = (-6 + 756) \times q^2$$

$$E = 750q^2$$

$$\blacktriangleright 6. F = -3f^2 - (-10f) \times 10f \times (-4) \times (-6)$$

$$F = -3f^2 - (-10 \times 10 \times (-4) \times (-6) \times f \times f)$$

$$F = -3f^2 - (-2400f^2)$$

$$F = -3f^2 + 2400f^2$$

$$F = (-3 + 2400) \times f^2$$

$$F = 2397f^2$$

**Corrigé de l'exercice 2**

Réduire les expressions littérales suivantes :

$$\blacktriangleright 1. A = 2 - g^2 - 5 + 10g^2 - 2g + 6g$$

$$A = -g^2 + 10g^2 - 2g + 6g + 2 - 5$$

$$A = (-1 + 10) \times g^2 + (-2 + 6) \times g - 3$$

$$A = 9g^2 + 4g - 3$$

$$\blacktriangleright 2. B = 6 - (-6c) - (-10) - 10c + 9c^2 - (-6c^2)$$

$$B = 6 + 6c + 10 - 10c + 9c^2 + 6c^2$$

$$B = 9c^2 + 6c^2 + 6c - 10c + 6 + 10$$

$$B = (9 + 6) \times c^2 + (6 - 10) \times c + 16$$

$$B = 15c^2 - 4c + 16$$

$$\blacktriangleright 3. C = 8 - (-8z^2) - 3z - 10 - (-7z^2) + 3z$$

$$C = 8 + 8z^2 - 3z - 10 + 7z^2 + 3z$$

$$C = 8z^2 + 7z^2 - 3z + 3z + 8 - 10$$

$$C = (8 + 7) \times z^2 + (-3 + 3) \times z - 2$$

$$C = 15z^2 + 0 - 2$$

$$C = 15z^2 - 2$$

$$\blacktriangleright 4. D = -5 \times w \times (-5) + 10w^2 - (-2w)$$

$$D = -5 \times (-5) \times w + 10w^2 + 2w$$

$$D = 25w + 10w^2 + 2w$$

$$D = 10w^2 + 25w + 2w$$

$$D = 10w^2 + (25 + 2) \times w$$

$$D = 10w^2 + 27w$$

$$\blacktriangleright 5. E = -7k - 6k^2 - 6 \times (-3) \times 9k$$

$$E = -7k - 6k^2 + 18 \times 9 \times k$$

$$E = -7k - 6k^2 + 162k$$

$$E = -6k^2 - 7k + 162k$$

$$E = -6k^2 + (-7 + 162) \times k$$

$$E = -6k^2 + 155k$$

$$\blacktriangleright 6. F = h^2 - 10h \times 3h \times (-4) \times (-9)$$

$$F = h^2 - 10 \times 3 \times (-4) \times (-9) \times h \times h$$

$$F = h^2 - 1080h^2$$

$$F = (1 - 1080) \times h^2$$

$$F = -1079h^2$$

**Corrigé de l'exercice 3**

Réduire les expressions littérales suivantes :

►1.  $A = 6x^2 - 9 - (-3x^2) - (-4x) - 5x + 1$

$$A = 6x^2 - 9 + 3x^2 + 4x - 5x + 1$$

$$A = 6x^2 + 3x^2 + 4x - 5x - 9 + 1$$

$$A = (6 + 3) \times x^2 + (4 - 5) \times x - 8$$

$$A = 9x^2 - x - 8$$

►2.  $B = -9 + 5a^2 - a^2 - 5a - (-6) - 8a$

$$B = 5a^2 - a^2 - 5a - 9 + 6 - 8a$$

$$B = 5a^2 - a^2 - 5a - 8a - 9 + 6$$

$$B = (5 - 1) \times a^2 + (-5 - 8) \times a - 3$$

$$B = 4a^2 - 13a - 3$$

►3.  $C = -1 + 2h + 4h^2 - (-6) - 7h^2 - 5h$

$$C = -1 + 2h + 4h^2 + 6 - 7h^2 - 5h$$

$$C = 4h^2 - 7h^2 + 2h - 5h - 1 + 6$$

$$C = (4 - 7) \times h^2 + (2 - 5) \times h + 5$$

$$C = -3h^2 - 3h + 5$$

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

$$D = 10 \times (-8) \times 10 \times n \times n + 10n^2$$

$$D = -800n^2 + 10n^2$$

$$D = (-800 + 10) \times n^2$$

$$D = -790n^2$$

►5.  $E = 2m \times (-4m) - 9m^2 - 4 \times 10$

$$E = 2 \times (-4) \times m \times m - 9m^2 - 40$$

$$E = -8m^2 - 9m^2 - 40$$

$$E = (-8 - 9) \times m^2 - 40$$

$$E = -17m^2 - 40$$

►6.  $F = -4f^2 + 9f \times (-4) \times (-6) \times 6f$

$$F = -4f^2 + 9 \times (-4) \times (-6) \times 6 \times f \times f$$

$$F = -4f^2 + 1296f^2$$

$$F = (-4 + 1296) \times f^2$$

$$F = 1292f^2$$

**Corrigé de l'exercice 4**

Réduire les expressions littérales suivantes :

►1.  $A = -8 - (-6q) - 2 - (-10q^2) + 2q - 9q^2$

$$A = -8 + 6q - 2 + 10q^2 + 2q - 9q^2$$

$$A = 10q^2 - 9q^2 + 6q + 2q - 8 - 2$$

$$A = (10 - 9) \times q^2 + (6 + 2) \times q - 10$$

$$A = q^2 + 8q - 10$$

►2.  $B = -2a + 5a^2 - (-5a^2) - 9 - (-3) - 6a$

$$B = -2a + 5a^2 + 5a^2 - 9 + 3 - 6a$$

$$B = 5a^2 + 5a^2 - 2a - 6a - 9 + 3$$

$$B = (5 + 5) \times a^2 + (-2 - 6) \times a - 6$$

$$B = 10a^2 - 8a - 6$$

►3.  $C = 6a^2 - (-5a) - (-6) - a - 6 + 4a^2$

$$C = 6a^2 + 5a + 6 - a - 6 + 4a^2$$

$$C = 6a^2 + 4a^2 + 5a - a + 6 - 6$$

$$C = (6 + 4) \times a^2 + (5 - 1) \times a + 0$$

$$C = 10a^2 + 4a + 0$$

$$C = 10a^2 + 4a$$

►4.  $D = -9k^2 - (-4) \times (-3k) \times 6k \times (-1)$

$$D = -9k^2 - (-4 \times (-3) \times 6 \times (-1) \times k \times k)$$

$$D = -9k^2 - (-72k^2)$$

$$D = -9k^2 + 72k^2$$

$$D = (-9 + 72) \times k^2$$

$$D = 63k^2$$

►5.  $E = -2 \times (-6) \times 3s \times (-3s) - 4s^2$

$$E = 12 \times 3 \times (-3) \times s \times s - 4s^2$$

$$E = -108s^2 - 4s^2$$

$$E = (-108 - 4) \times s^2$$

$$E = -112s^2$$

►6.  $F = -3d \times 10 \times 2 - (-3d^2) - 5d$

$$F = -3 \times 10 \times 2 \times d + 3d^2 - 5d$$

$$F = -60d + 3d^2 - 5d$$

$$F = 3d^2 - 60d - 5d$$

$$F = 3d^2 + (-60 - 5) \times d$$

$$F = 3d^2 - 65d$$

**Corrigé de l'exercice 5**

Réduire les expressions littérales suivantes :

►1.  $A = -4m - 1 - 1 - 4m + 3m^2 - 5m^2$

$$A = -4m - 2 - 4m + 3m^2 - 5m^2$$

$$A = 3m^2 - 5m^2 - 4m - 4m - 2$$

$$A = (3 - 5) \times m^2 + (-4 - 4) \times m - 2$$

$$A = -2m^2 - 8m - 2$$

►2.  $B = 4n + 9n^2 - 4n^2 - n - (-2) - (-2)$

$$B = 4n + 9n^2 - 4n^2 - n + 2 + 2$$

$$B = 9n^2 - 4n^2 + 4n - n + 2 + 2$$

$$B = (9 - 4) \times n^2 + (4 - 1) \times n + 4$$

$$B = 5n^2 + 3n + 4$$

►3.  $C = 6p - 6p^2 - 2p^2 + 2 - 4p - 1$

$$C = -6p^2 - 2p^2 + 6p - 4p + 2 - 1$$

$$C = (-6 - 2) \times p^2 + (6 - 4) \times p + 1$$

$$C = -8p^2 + 2p + 1$$

►4.  $D = 4 \times 8x \times (-9) - 3x^2 - 9x$

$$D = 4 \times 8 \times (-9) \times x - 3x^2 - 9x$$

$$D = -288x - 3x^2 - 9x$$

$$D = -3x^2 - 288x - 9x$$

$$D = -3x^2 + (-288 - 9) \times x$$

$$D = -3x^2 - 297x$$

►5.  $E = -10x^2 - (-8x) \times 1 \times 9x \times 8$

$$E = -10x^2 - (-8 \times 9 \times 8 \times x \times x)$$

$$E = -10x^2 - (-576x^2)$$

$$E = -10x^2 + 576x^2$$

$$E = (-10 + 576) \times x^2$$

$$E = 566x^2$$

►6.  $F = -10p \times p - 2p^2 + 7 \times 1$

$$F = -10p^2 - 2p^2 + 7$$

$$F = (-10 - 2) \times p^2 + 7$$

$$F = -12p^2 + 7$$

**Corrigé de l'exercice 6**

Réduire les expressions littérales suivantes :

►1.  $A = 7 - (-7v^2) - 3v - (-5v) - 4v^2 - 5$

$$A = 7 + 7v^2 - 3v + 5v - 4v^2 - 5$$

$$A = 7v^2 - 4v^2 - 3v + 5v + 7 - 5$$

$$A = (7 - 4) \times v^2 + (-3 + 5) \times v + 2$$

$$A = 3v^2 + 2v + 2$$

►2.  $B = t^2 - 8 - 7t - 1 - (-5t) + 7t^2$

$$B = t^2 - 7t - 8 - 1 + 5t + 7t^2$$

$$B = t^2 + 7t^2 - 7t + 5t - 8 - 1$$

$$B = (1 + 7) \times t^2 + (-7 + 5) \times t - 9$$

$$B = 8t^2 - 2t - 9$$

►3.  $C = -7m^2 - 3m - 2m^2 - (-6) + 3 - (-5m)$

$$C = -7m^2 - 3m - 2m^2 + 6 + 3 + 5m$$

$$C = -7m^2 - 2m^2 - 3m + 5m + 6 + 3$$

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

$$C = -9m^2 + 2m + 9$$

►4.  $D = -7u \times 1 \times 7u \times 4 - (-4u^2)$

$$D = -7 \times 7 \times 4 \times u \times u + 4u^2$$

$$D = -196u^2 + 4u^2$$

$$D = (-196 + 4) \times u^2$$

$$D = -192u^2$$

►5.  $E = -3d + 3d^2 + 9d \times (-6) \times 1$

$$E = -3d + 3d^2 + 9 \times (-6) \times d$$

$$E = -3d + 3d^2 - 54d$$

$$E = 3d^2 - 3d - 54d$$

$$E = 3d^2 + (-3 - 54) \times d$$

$$E = 3d^2 - 57d$$

►6.  $F = 6a \times (-4) \times (-9a) - (-8a^2) - 5$

$$F = 6 \times (-4) \times (-9) \times a \times a + 8a^2 - 5$$

$$F = 216a^2 + 8a^2 - 5$$

$$F = (216 + 8) \times a^2 - 5$$

$$F = 224a^2 - 5$$