Corrigé de l'exercice 1

Réduire, si possible, les expressions suivantes :

▶1. $A = -3\,r^2 \times 9$

$A = -3 \times 9 \times r^2$

$A = -27\,r^2$

▶2. $B = -3 \times 9\,b$

$B = -3 \times 9 \times b$

$B = -27\,b$

▶3. $C = 7\,m^2 - 2\,m^2$

$C = (7-2) \times m^2$

$C = 5\,m^2$

▶4. $D = -7\,t^2 - 2\,t^2$

$D = (-7-2) \times t^2$

$D = -9\,t^2$

▶5. $E = 3\,r^2 \times (-1)$

$E = 3 \times (-1) \times r^2$

$E = -3\,r^2$

▶6. $F = -5\,x + x^2$

▶7. $G = -9\,x - \left(-x^2\right)$

$G = -9\,x + x^2$

▶8. $H = h + 10$

▶9. $I = -2\,c^2 - 6\,c^2$

$I = (-2-6) \times c^2$

$I = -8\,c^2$

Corrigé de l'exercice 2

Réduire les expressions littérales suivantes :

▶1. $A = 6\,g^2 - g^2 - 5\,g + 6\,g - (-3) + 8$

$A = (6-1) \times g^2 + (-5+6) \times g + 3 + 8$

$A = 5\,g^2 + g + 11$

▶2. $B = 8\,a - \left(-2\,a^2\right) - 4\,a^2 - 8 + 8 + 2\,a$

$B = 8\,a + 2\,a^2 - 4\,a^2 - 8 + 8 + 2\,a$

$B = 2\,a^2 - 4\,a^2 + 8\,a + 2\,a - 8 + 8$

$B = (2-4) \times a^2 + (8+2) \times a + 0$

$B = -2\,a^2 + 10\,a + 0$

$B = -2\,a^2 + 10\,a$

▶3. $C = -4\,w - 7 - 4\,w^2 + 4\,w^2 - (-3) - w$

$C = -4\,w - 7 + (-4+4) \times w^2 + 3 - w$

$C = -4\,w - 7 + 0 + 3 - w$

$C = -4\,w - w - 7 + 3$

$C = (-4-1) \times w - 4$

$C = -5\,w - 4$

▶4. $D = -1 + 4\,s^2 + 6\,s \times 2\,s \times (-5)$

$D = -1 + 4\,s^2 + 6 \times 2 \times (-5) \times s \times s$

$D = -1 + 4\,s^2 - 60\,s^2$

$D = 4\,s^2 - 60\,s^2 - 1$

$D = (4-60) \times s^2 - 1$

$D = -56\,s^2 - 1$

▶5. $E = -10 \times (-5) \times 7\,r - \left(-5\,r^2\right) - 5\,r$

$E = 50 \times 7 \times r + 5\,r^2 - 5\,r$

$E = 350\,r + 5\,r^2 - 5\,r$

$E = 5\,r^2 + 350\,r - 5\,r$

$E = 5\,r^2 + (350-5) \times r$

$E = 5\,r^2 + 345\,r$

▶6. $F = 7 - 9\,x^2 + 2 \times (-2\,x) \times (-3\,x)$

$F = 7 - 9\,x^2 + 2 \times (-2) \times (-3) \times x \times x$

$F = 7 - 9\,x^2 + 12\,x^2$

$F = -9\,x^2 + 12\,x^2 + 7$

$F = (-9+12) \times x^2 + 7$

$F = 3\,x^2 + 7$

Corrigé de l'exercice 3

Réduire les expressions littérales suivantes :

▶1. $A = 6 - 5\,h^2 - 8\,h^2 + 7\,h - 5 - 3\,h$

$A = -5\,h^2 - 8\,h^2 + 7\,h - 3\,h + 6 - 5$

$A = (-5 - 8) \times h^2 + (7 - 3) \times h + 1$

$A = -13\,h^2 + 4\,h + 1$

▶2. $B = -2 + 5\,n - 4 - \left(-10\,n^2\right) - 6\,n^2 - 2\,n$

$B = 5\,n - 2 - 4 + 10\,n^2 - 6\,n^2 - 2\,n$

$B = 10\,n^2 - 6\,n^2 + 5\,n - 2\,n - 2 - 4$

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

$B = 4\,n^2 + 3\,n - 6$

▶3. $C = -10\,d^2 - 10\,d + 8 - (-8) + 6\,d^2 - 3\,d$

$C = -10\,d^2 - 10\,d + 8 + 8 + 6\,d^2 - 3\,d$

$C = -10\,d^2 + 6\,d^2 - 10\,d - 3\,d + 8 + 8$

$C = (-10 + 6) \times d^2 + (-10 - 3) \times d + 16$

$C = -4\,d^2 - 13\,d + 16$

▶4. $D = -10 + 8\,d^2 - 4\,d \times 2\,d \times 8$

$D = -10 + 8\,d^2 - 4 \times 2 \times 8 \times d \times d$

$D = -10 + 8\,d^2 - 64\,d^2$

$D = 8\,d^2 - 64\,d^2 - 10$

$D = (8 - 64) \times d^2 - 10$

$D = -56\,d^2 - 10$

▶5. $E = -10 - 6\,h^2 - h \times (-h) \times 2$

$E = -10 - 6\,h^2 - ((-1) \times 2 \times h \times h)$

$E = -10 - 6\,h^2 - \left(-2\,h^2\right)$

$E = -10 - 6\,h^2 + 2\,h^2$

$E = -6\,h^2 + 2\,h^2 - 10$

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

$E = -4\,h^2 - 10$

▶6. $F = -2\,w \times (-6\,w) \times 10 \times 4 - \left(-5\,w^2\right)$

$F = -2 \times (-6) \times 10 \times 4 \times w \times w + 5\,w^2$

$F = 480\,w^2 + 5\,w^2$

$F = (480 + 5) \times w^2$

$F = 485\,w^2$

Corrigé de l'exercice 4

Développer et réduire les expressions suivantes :

$A = -6\,x\,(-5\,x - 6)$

$A = -6\,x \times (-5\,x) + (-6\,x) \times (-6)$

$\boxed{A = 30\,x^2 + 36\,x}$

$B = (-x + 9) \times 6$

$B = 6 \times (-x) + 6 \times 9$

$\boxed{B = -6\,x + 54}$

$C = 9\,x\,(-3\,x - 6)$

$C = 9\,x \times (-3\,x) + 9\,x \times (-6)$

$\boxed{C = -27\,x^2 - 54\,x}$

$D = (-4\,x + 2) \times 5$

$D = 5 \times (-4\,x) + 5 \times 2$

$\boxed{D = -20\,x + 10}$

$E = -3\,(7\,x + 7)$

$E = -3 \times 7\,x + (-3) \times 7$

$\boxed{E = -21\,x - 21}$

$F = (9\,x - 4) \times 10$

$F = 10 \times 9\,x + 10 \times (-4)$

$\boxed{F = 90\,x - 40}$

$G = (-10\,x - 6) \times 8$

$G = 8 \times (-10\,x) + 8 \times (-6)$

$\boxed{G = -80\,x - 48}$

$H = (-6\,x - 3) \times 4\,x$

$H = 4\,x \times (-6\,x) + 4\,x \times (-3)$

$\boxed{H = -24\,x^2 - 12\,x}$

Corrigé de l'exercice 5

Développer et réduire les expressions suivantes :

$A = (-3\,x + 10)\,(3\,x + 2)$

$A = -9\,x^2 + (-6\,x) + 30\,x + 20$

$\boxed{A = -9\,x^2 + 24\,x + 20}$

$B = (-5\,x + 2)\,(4\,x - 5)$

$B = -20\,x^2 + 25\,x + 8\,x + (-10)$

$\boxed{B = -20\,x^2 + 33\,x - 10}$

$C = (-8\,x - 6)\,(-7\,x - 5)$

$C = 56\,x^2 + 40\,x + 42\,x + 30$

$\boxed{C = 56\,x^2 + 82\,x + 30}$

$D = (3\,x - 6)\,(10\,x + 7)$

$D = 30\,x^2 + 21\,x + (-60\,x) + (-42)$

$\boxed{D = 30\,x^2 - 39\,x - 42}$

$E = (10\,x - 6)\,(10\,x - 10)$

$E = 100\,x^2 + (-100\,x) + (-60\,x) + 60$

$\boxed{E = 100\,x^2 - 160\,x + 60}$

$F = (5\,x - 2)\,(10\,x - 10)$

$F = 50\,x^2 + (-50\,x) + (-20\,x) + 20$

$\boxed{F = 50\,x^2 - 70\,x + 20}$

Corrigé de l'exercice 6

Développer et réduire les expressions suivantes :

$A = (-x + 4)\,(-9\,x - 8)$

$A = 9\,x^2 + 8\,x + (-36\,x) + (-32)$

$\boxed{A = 9\,x^2 - 28\,x - 32}$

$B = (-9\,x - 1)\,(4\,x + 7)$

$B = -36\,x^2 + (-63\,x) + (-4\,x) + (-7)$

$\boxed{B = -36\,x^2 - 67\,x - 7}$

$C = (6\,x + 9)\,(10\,x - 5)$

$C = 60\,x^2 + (-30\,x) + 90\,x + (-45)$

$\boxed{C = 60\,x^2 + 60\,x - 45}$

$D = (8\,x + 6)\,(x + 8)$

$D = 8\,x^2 + 64\,x + 6\,x + 48$

$\boxed{D = 8\,x^2 + 70\,x + 48}$

$E = (-4\,x + 1)\,(-5\,x + 3)$

$E = 20\,x^2 + (-12\,x) + (-5\,x) + 3$

$\boxed{E = 20\,x^2 - 17\,x + 3}$

$F = (-5\,x + 7)\,(-4\,x - 2)$

$F = 20\,x^2 + 10\,x + (-28\,x) + (-14)$

$\boxed{F = 20\,x^2 - 18\,x - 14}$