Corrigé de l'exercice 1

Développer et réduire les expressions suivantes.

$A = (10\,x + 1)^2$

$A = (10\,x)^2 + 2 \times 10\,x \times 1 + 1^2$

$$\boxed{A = 100\,x^2 + 20\,x + 1}$$

$B = (3\,x - 4)^2$

$B = (3\,x)^2 - 2 \times 3\,x \times 4 + 4^2$

$$\boxed{B = 9\,x^2 - 24\,x + 16}$$

$C = (10\,x - 10)\,(10\,x + 10)$

$C = (10\,x)^2 - 10^2$

$$\boxed{C = 100\,x^2 - 100}$$

$D = (-3\,x + 7)\,(8\,x + 2)$

$D = -24\,x^2 + (-6\,x) + 56\,x + 14$

$$\boxed{D = -24\,x^2 + 50\,x + 14}$$

$E = (10\,x - 5)^2 - (10\,x + 7)^2$

$E = (10\,x)^2 - 2 \times 10\,x \times 5 + 5^2 - ((10\,x)^2 + 2 \times 10\,x \times 7 + 7^2)$

$E = 100\,x^2 - 100\,x + 25 - (100\,x^2 + 140\,x + 49)$

$E = 100\,x^2 - 100\,x + 25 - 100\,x^2 - 140\,x - 49$

$$\boxed{E = -240\,x - 24}$$

$F = (8\,x - 5)\,(8\,x + 5) + (8\,x - 5)\,(-10\,x - 5)$

$F = (8\,x)^2 - 5^2 + -80\,x^2 + (-40\,x) + 50\,x + 25$

$F = 64\,x^2 - 25 - 80\,x^2 + 10\,x + 25$

$$\boxed{F = -16\,x^2 + 10\,x}$$

Corrigé de l'exercice 2

Factoriser les expressions suivantes.

$A = 25\,x^2 - 49$

$A = (5\,x)^2 - 7^2$

$$\boxed{A = (5\,x + 7)\,(5\,x - 7)}$$

$B = (-7\,x - 9)\,(-2\,x + 5) + (-2\,x + 5)^2$

$B = (-2\,x + 5)\,(-7\,x - 9 - 2\,x + 5)$

$$\boxed{B = (-2\,x + 5)\,(-9\,x - 4)}$$

$C = 81\,x^2 - 36 + (9\,x + 6)\,(5\,x + 7)$

$C = (9\,x)^2 - 6^2 + (9\,x + 6)\,(5\,x + 7)$

$C = (9\,x + 6)\,(9\,x - 6) + (9\,x + 6)\,(5\,x + 7)$

$C = (9\,x + 6)\,(9\,x - 6 + 5\,x + 7)$

$$\boxed{C = (9\,x + 6)\,(14\,x + 1)}$$

$D = (-10\,x - 1)^2 - 9$

$D = (-10\,x - 1)^2 - 3^2$

$D = (-10\,x - 1 + 3)\,(-10\,x - 1 - 3)$

$D =$

$$\boxed{D = (-10\,x + 2)\,(-10\,x - 4)}$$

$E = -(10\,x + 2)\,(-7\,x - 4) + (10\,x + 2)$

$E = -(10\,x + 2)\,(-7\,x - 4) + (10\,x + 2) \times 1$

$E = (10\,x + 2)\,\big(-(-7\,x - 4) + 1\big)$

$E = (10\,x + 2)\,(7\,x + 4 + 1)$

$$\boxed{E = (10\,x + 2)\,(7\,x + 5)}$$

$F = -(-7\,x + 5)\,(-6\,x + 4) - (-7\,x + 4)\,(-7\,x + 5)$

$F = (-7\,x + 5)\,\big(-(-6\,x + 4) - (-7\,x + 4)\big)$

$F = (-7\,x + 5)\,(6\,x - 4 + 7\,x - 4)$

$$\boxed{F = (-7\,x + 5)\,(13\,x - 8)}$$

Corrigé de l'exercice 3

Développer et réduire les expressions suivantes.

$A = (6\,x + 4)^2$

$A = (6\,x)^2 + 2 \times 6\,x \times 4 + 4^2$

$$\boxed{A = 36\,x^2 + 48\,x + 16}$$

$B = (8\,x - 3)^2$

$B = (8\,x)^2 - 2 \times 8\,x \times 3 + 3^2$

$$\boxed{B = 64\,x^2 - 48\,x + 9}$$

$C = (7\,x - 10)\,(-9\,x - 6)$

$C = -63\,x^2 + (-42\,x) + 90\,x + 60$

$$\boxed{C = -63\,x^2 + 48\,x + 60}$$

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

$D = x^2 - 8^2$

$$\boxed{D = x^2 - 64}$$

$E = (8\,x + 8)\,(8\,x - 8) - (3\,x + 6)^2$

$E = (8\,x)^2 - 8^2 - \big((3\,x)^2 + 2 \times 3\,x \times 6 + 6^2\big)$

$E = 64\,x^2 - 64 - (9\,x^2 + 36\,x + 36)$

$E = 64\,x^2 - 64 - 9\,x^2 - 36\,x - 36$

$$\boxed{E = 55\,x^2 - 36\,x - 100}$$

$F = -(2\,x - 1)^2 - (x + 1)\,(-8\,x + 4)$

$F = -\big((2\,x)^2 - 2 \times 2\,x \times 1 + 1^2\big) - (-8\,x^2 + 4\,x + (-8\,x) + 4)$

$F = -(4\,x^2 - 4\,x + 1) - (-8\,x^2 - 4\,x + 4)$

$F = -4\,x^2 + 4\,x - 1 + 8\,x^2 + 4\,x - 4$

$$\boxed{F = 4\,x^2 + 8\,x - 5}$$

Corrigé de l'exercice 4

Factoriser les expressions suivantes.

$A = 49\,x^2 - 4 + (7\,x + 2)\,(-6\,x + 9)$

$A = (7\,x)^2 - 2^2 + (7\,x + 2)\,(-6\,x + 9)$

$A = (7\,x + 2)\,(7\,x - 2) + (7\,x + 2)\,(-6\,x + 9)$

$A = (7\,x + 2)\,(7\,x - 2 - 6\,x + 9)$

$$\boxed{A = (7\,x + 2)\,(x + 7)}$$

$B = -(5\,x - 9)\,(7\,x - 4) - (7\,x - 4)\,(6\,x + 1)$

$B = (7\,x - 4)\,\big(-(5\,x - 9) - (6\,x + 1)\big)$

$B = (7\,x - 4)\,(-5\,x + 9 - 6\,x - 1)$

$$\boxed{B = (7\,x - 4)\,(-11\,x + 8)}$$

$C = -(5\,x - 1)\,(-4\,x - 10) + (-4\,x - 10)^2$

$C = (-4\,x - 10)\,\big(-(5\,x - 1) - 4\,x - 10\big)$

$C = (-4\,x - 10)\,(-5\,x + 1 - 4\,x - 10)$

$$\boxed{C = (-4\,x - 10)\,(-9\,x - 9)}$$

$D = 64\,x^2 - 100$

$D = (8\,x)^2 - 10^2$

$$\boxed{D = (8\,x + 10)\,(8\,x - 10)}$$

$E = (5\,x + 3)\,(-6\,x - 3) - (-6\,x - 3)$

$E = (5\,x + 3)\,(-6\,x - 3) - (-6\,x - 3) \times 1$

$E = (-6\,x - 3)\,(5\,x + 3 - 1)$

$$\boxed{E = (-6\,x - 3)\,(5\,x + 2)}$$

$F = (5\,x + 3)^2 - 64$

$F = (5\,x + 3)^2 - 8^2$

$F = (5\,x + 3 + 8)\,(5\,x + 3 - 8)$

$F =$

$$\boxed{F = (5\,x + 11)\,(5\,x - 5)}$$

Corrigé de l'exercice 5

Développer et réduire les expressions suivantes.

$A = (2\,x - 4)\,(2\,x + 4)$

$A = (2\,x)^2 - 4^2$

$$\boxed{A = 4\,x^2 - 16}$$

$B = (5\,x - 3)^2$

$B = (5\,x)^2 - 2 \times 5\,x \times 3 + 3^2$

$$\boxed{B = 25\,x^2 - 30\,x + 9}$$

$C = (-10\,x + 2)\,(-6\,x - 9)$

$C = 60\,x^2 + 90\,x + (-12\,x) + (-18)$

$$\boxed{C = 60\,x^2 + 78\,x - 18}$$

$D = (2\,x + 9)^2$

$D = (2\,x)^2 + 2 \times 2\,x \times 9 + 9^2$

$$\boxed{D = 4\,x^2 + 36\,x + 81}$$

$E = -(2\,x + 3)\,(2\,x - 3) + (x + 1)^2$

$E = -((2\,x)^2 - 3^2) + x^2 + 2 \times x \times 1 + 1^2$

$E = -(4\,x^2 - 9) + x^2 + 2\,x + 1$

$E = -4\,x^2 + 9 + x^2 + 2\,x + 1$

$$\boxed{E = -3\,x^2 + 2\,x + 10}$$

$F = -(8\,x - 8)\,(x - 5) + (7\,x - 8)^2$

$F = -(8\,x^2 + (-40\,x) + (-8\,x) + 40) + (7\,x)^2 - 2 \times 7\,x \times 8 + 8^2$

$F = -(8\,x^2 - 48\,x + 40) + 49\,x^2 - 112\,x + 64$

$F = -8\,x^2 + 48\,x - 40 + 49\,x^2 - 112\,x + 64$

$$\boxed{F = 41\,x^2 - 64\,x + 24}$$

Corrigé de l'exercice 6

Factoriser les expressions suivantes.

$A = (9\,x - 6)\,(2\,x + 5) + (9\,x - 6)\,(-4\,x - 6)$

$A = (9\,x - 6)\,(2\,x + 5 - 4\,x - 6)$

$$\boxed{A = (9\,x - 6)\,(-2\,x - 1)}$$

$B = 9 - (9\,x + 1)^2$

$B = 3^2 - (9\,x + 1)^2$

$B = (3 + 9\,x + 1)\,(3 - (9\,x + 1))$

$B = (3 + 9\,x + 1)\,(3 - 9\,x - 1)$

$$\boxed{B = (9\,x + 4)\,(-9\,x + 2)}$$

$C = (-6\,x - 8)^2 + (-9\,x - 1)\,(-6\,x - 8)$

$C = (-6\,x - 8)\,(-6\,x - 8 - 9\,x - 1)$

$$\boxed{C = (-6\,x - 8)\,(-15\,x - 9)}$$

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

$D = (-3\,x + 3)\,(6\,x - 9) + (6\,x - 9) \times 1$

$D = (6\,x - 9)\,(-3\,x + 3 + 1)$

$$\boxed{D = (6\,x - 9)\,(-3\,x + 4)}$$

$E = 49\,x^2 - 25 - (7\,x + 5)\,(-10\,x + 9)$

$E = (7\,x)^2 - 5^2 - (7\,x + 5)\,(-10\,x + 9)$

$E = (7\,x + 5)\,(7\,x - 5) - (7\,x + 5)\,(-10\,x + 9)$

$E = (7\,x + 5)\,(7\,x - 5 - (-10\,x + 9))$

$E = (7\,x + 5)\,(7\,x - 5 + 10\,x - 9)$

$$\boxed{E = (7\,x + 5)\,(17\,x - 14)}$$

$F = 16\,x^2 - 64$

$F = (4\,x)^2 - 8^2$

$$\boxed{F = (4\,x + 8)\,(4\,x - 8)}$$