Exercices

Corr. exo. 1.

a) $9s^2z^2 - 20sz^2 + \frac{100}{9}z^2 = \left(3sz - \frac{10}{3}z\right)^2$

b) $-\frac{2}{3}rz + \frac{1}{9} + r^2z^2 = \left(rz - \frac{1}{3}\right)^2$

c) $-\frac{49}{9} + s^4 = \left(s^2 - \frac{7}{3}\right)\left(s^2 + \frac{7}{3}\right)$

d) $\frac{9}{64}r^2t^2 + \frac{3}{20}rtx + \frac{1}{25}x^2 = \left(\frac{3}{8}rt + \frac{1}{5}x\right)^2$

e) $14rz + 49 + r^2z^2 = (rz + 7)^2$

f) $36x^2y^2 - 25s^2y^2 = (6xy + 5sy)(6xy - 5sy)$

g) $\frac{25}{9}x^2 + 64r^4 - \frac{80}{3}r^2x = \left(8r^2 - \frac{5}{3}x\right)^2$

h) $s^2y^2 + 6sy + 9 = (sy + 3)^2$

i) $\frac{16}{25} - \frac{8}{5}xz + x^2z^2 = \left(xz - \frac{4}{5}\right)^2$

j) $16r^4 + \frac{40}{3}r^2z + \frac{25}{9}z^2 = \left(\frac{5}{3}z + 4r^2\right)^2$

Automatismes

Corr. exo. 2.

a) $10z(3s^2t + s - 3)$ ou $-10z(-3s^2t - s + 3)$

b) $6t^2z(9rtz - rt - 3)$ ou $-6t^2z(-9rtz + rt + 3)$

c) $9x(-5r^2t - 3r + 8)$ ou $-9x(5r^2t + 3r - 8)$

d) $5sy(8sy^2 + 5sx^2 + 9x)$

e) $-10sx^2(2x^2 + 2z + 9s)$

f) $2yz^2(5y^2 + 10z^2 - 3)$ ou $-2yz^2(-5y^2 - 10z^2 + 3)$

Corr. exo. 3.

a) $(6t - x)^2$

b) $(7rs - 5)(7rs + 5)$

c) $(4xz + 5)^2$

d) $(4rs + 7)^2$

e) $(2z^2 - 3)^2$

f) $(2x - 7s^2)^2$

g) $(6r + 5t^2)(6r - 5t^2)$

h) $(ry - 7)^2$

i) $(6rt - 7)(6rt + 7)$

j) $(8x + 7)^2$

Corr. exo. 4.

a) $(4t - 7yz^2)^2$

b) $(2x^2 - 7s)^2$

c) $(6rsx + 7)^2$

d) $(10r - 7y)^2$

e) $(4syz - 3)^2$

f) $(2xy - z)^2$

g) $(7s - 10r)^2$

h) $(2x - 3)^2$

i) $(9x + 4s^2y)^2$

j) $(5rx - 3)^2$

Corr. exo. 5.

a) $3r(25r^4s^2t^2 + 20r^2sty + 4y^2) = 3r(2y + 5r^2st)^2$

b) $-x(25s^2t^2x^2y^2 + 80stxy + 64) = -x(5stxy + 8)^2$

c) $-3rz(9y^2z^2 + 60yz + 100) = -3rz(3yz + 10)^2$

d) $-2s^2z(64t^4x^2 - 16s^2t^2xz + s^4z^2) = -2s^2z(8t^2x - s^2z)^2$

e) $-3x^2y(9s^2y^4z^2 + 48sy^2z + 64) = -3x^2y(3sy^2z + 8)^2$

f) $3tx(4t^2x^2z^2 - 12txz + 9) = 3tx(2txz - 3)^2$

g) $-5z(y^2 - 16y + 64) = -5z(y - 8)^2$

h) $-z(r^2t^2 + 4rtx^2 + 4x^4) = -z(rt + 2x^2)^2$

i) $-2t(-49r^2s^4 + 36t^2) = -2t(6t + 7rs^2)(6t - 7rs^2)$

j) $5rz(81x^2y^4z^2 - 72rxy^2z + 16r^2) = 5rz(9xy^2z - 4r)^2$

Corr. exo. 6.

a) $3sz^2(49 + 112sz + 64s^2z^2) = 3sz^2(8sz + 7)^2$

b) $-2x(36s^2x^4 + 49y^2 + 84sx^2y) = -2x(6sx^2 + 7y)^2$

c) $-5s(-72sz + 81z^2 + 16s^2) = -5s(9z - 4s)^2$

d) $2sx(9s^2t^2 + 1 - 6st) = 2sx(3st - 1)^2$

e) $-2sx(-28sxy + 49x^2y^2 + 4s^2) = -2sx(7xy - 2s)^2$

f) $5t(60st + 25 + 36s^2t^2) = 5t(6st + 5)^2$

g) $2z(-16syz + 64y^2z^2 + s^2) = 2z(8yz - s)^2$

h) $-3tz^2(49r^4 - 140r^2t + 100t^2) = -3tz^2(10t - 7r^2)^2$

i) $2z(81z^2 + 100 + 180z) = 2z(9z + 10)^2$

j) $-3sxz(36x^2 + s^2z^2 + 12sxz) = -3sxz(6x + sz)^2$