Exercice 3

Exercices de calcul : correction

1(a) 443 : $\left(3a^2b^3\right)\left(\frac{2}{3}ab^5\right) = \left(3\times\frac{2}{3}\right)a^2a\,b^3b^5 = \underline{2a^3b^8}$.

(b) 444 : $\left(\frac{4}{5}a^3b^2c\right)\left(-\frac{3}{4}abc^4\right) = \left(\frac{4}{5}\times-\frac{3}{4}\right)a^3a\,b^2b\,cc^4 = \frac{-4\times3}{5\times4}a^4b^3c^5 = \underline{-\frac{3}{5}a^4b^3c^5}$.

(c) 445 : $\left(\frac{4}{7}a^2xy^3\right)\left(-\frac{5}{2}a^3y^4\right) = \left(\frac{4}{7}\times\frac{-5}{2}\right)a^2a^3xy^3y^4 = \frac{-4\times5}{7\times2}a^5xy^7 = \underline{\frac{-10}{7}a^5xy^7}$.

(d) 446 : $\left(-\frac{3}{4}x^2y\right)\left(\frac{3}{5}a^3y^5\right) = \left(-\frac{3}{4}\times\frac{3}{5}\right)a^3x^2yy^5 = \underline{\frac{-9}{20}a^3x^2y^6}$.

(e) 447 : $\left(\frac{9}{4}a^4x^3y^3\right)\left(-\frac{4}{3}ax^2\right) = \left(\frac{9}{4}\times\frac{-4}{3}\right)a^4ax^2x^2y^3 = -\frac{9}{3}a^5x^4y^3 = \underline{-3a^5x^4y^3}$.

(f) 448 : $\left(\frac{14}{3}a^2b^3x\right)\left(\frac{-6}{7}a^2b^5\right) = -\frac{14\times6}{3\times7}a^2a^2b^3b^5x = \underline{-4a^4b^8x}$.

(g) 449 : $\left(-\frac{7}{2}ax^2y\right)\left(-\frac{8}{15}b^3xy^2\right)\left(\frac{5}{21}abx^3\right) = \left(-\frac{7}{2}\times-\frac{8}{15}\times\frac{5}{21}\right)aab^3bx^2xx^3yy^2$

$= +\frac{7\times8\times5}{2\times15\times21}a^2b^4x^6y^3$

$= \frac{\cancel{7}\cancel{2}\times\cancel{4}\cancel{5}}{\cancel{2}\times3\cancel{5}3\times\cancel{7}}a^2b^4x^6y^3 = \underline{\frac{4}{9}a^2b^4x^6y^3}$.

(h) 450 : $\left(-\frac{2}{3}xy^2\right)^2\left(-4x^2y\right) = \left(-\frac{2}{3}xy^2\right)\left(-\frac{2}{3}xy^2\right)\left(-4x^2y\right) = \frac{(-2)\times(-2)\times(-4)}{3\times3}xxx^2y^2y^2y$

$= \underline{-\frac{8}{9}x^4y^5}$.

(i) 451 : $\left(\frac{5}{12}ab^2x\right)\left(-\frac{2}{7}ax^2y^3\right)\left(\frac{-14}{5}b^3xy^4\right) = \frac{5\times(-2)\times(-14)}{12\times7\times5}a^4ab^2b^3xx^2xy^3y^4$

$= \frac{\cancel{5}\cancel{2}\cancel{2}\cancel{7}}{\cancel{2}\cancel{2}\times3\cancel{7}\cancel{5}}a^5b^4x^4y^7 = \underline{\frac{1}{3}a^5b^4x^4y^7}$.

(j) 452 : $\left(\frac{3}{5}x^2y\right)^2\left(-\frac{5}{4}xy\right) = \frac{3}{5}\times\frac{3}{5}\times\frac{3}{5}\times\frac{-5}{4}x^2x^2x^2yyyxy = \underline{\frac{-27}{100}x^7y^4}$.