CORRECTION DE L'EXERCICE E SUR LES CALCULS

$$A = \frac{35^8 \times 18^6}{27^3 \times 63^2} = \frac{(7\times 5)^8 \times (2\times 3^2)^6}{(3^3)^3 \times (7\times 3^2)^2} = \frac{7^8 \times 5^8 \times 2^6 \times 3^{12}}{3^9 \times 7^2 \times 3^4} = 2^6 \times 3^{12-9-4} \times 5^8 \times 7^{8-2} = 2^6 \times 3^{-1} \times 5^8 \times 7^6$$

$$\begin{aligned} B &= \frac{9^5 \times 63^6 \times 14^7}{18^{-1} \times 98^5} = \frac{(3^2)^5 \times (7\times 3^2)^6 \times (2\times 7)^7}{(3^2\times 2)^{-1} \times (2\times 7^2)^5} = \frac{3^{10} \times 7^6 \times 3^{12} \times 2^7 \times 7^7}{3^{-2} \times 2^{-1} \times 2^5 \times 7^{10}} = 2^{7+1-5} \times 3^{10+12+2} \times 7^{6+7-10} \\ &= 2^3 \times 3^{24} \times 7^3 \end{aligned}$$

$$\begin{aligned} C &= 0,001^4 \times 42000^{-3} = (10^{-3})^4 \times (2\times 3\times 7\times 10^3)^{-3} = 10^{-12-9} \times 2^{-3} \times 3^{-3} \times 7^{-3} \\ &= (2\times 5)^{-21} \times 2^{-3} \times 3^{-3} \times 7^{-3} = 2^{-21-3} \times 3^{-3} \times 5^{-21} \times 7^{-3} = 2^{-24} \times 3^{-3} \times 5^{-21} \times 7^{-3} \end{aligned}$$

$$\begin{aligned} D &= \frac{560^3 \times 1100^2}{0,00105^{-2}} = \frac{(10\times 7\times 8)^3 \times (11\times 10^2)^2}{(105\times 10^{-5})^{-2}} = \frac{(2\times 5\times 7\times 2^3)^3 \times 11^2 \times (2\times 5)^4}{(5\times 21\times (2\times 5)^{-5})^{-2}} \\ &= \frac{2^{4\times 3} \times 5^3 \times 7^3 \times 11^2 \times 2^4 \times 5^4}{5^{-2} \times 7^{-2} \times 3^{-2} \times 2^{10} \times 5^{10}} = \frac{2^{12+4} \times 5^{3+4} \times 7^3 \times 11^2}{2^{10} \times 3^{-2} \times 5^{-2+10} \times 7^{-2}} = 2^{16-10} \times 3^2 \times 5^{7-8} \times 7^{3+2} \times 11^2 \\ &= 2^6 \times 3^2 \times 5^{-1} \times 7^5 \times 11^2 \end{aligned}$$

$$\begin{aligned} E &= \frac{0,0000088^2}{630^3} = \frac{(88\times 10^{-7})^2}{(10\times 7\times 3^2)^3} = \frac{(2^3\times 11\times 2^{-7}\times 5^{-7})^2}{(2\times 5)^3 \times 7^3 \times 3^6} = \frac{2^{-4\times 2} \times 5^{-14} \times 11^2}{2^3 \times 5^3 \times 7^3 \times 3^6} \\ &= 2^{-8-3} \times 3^{-6} \times 5^{-14-3} \times 7^{-3} \times 11^2 = 2^{-11} \times 3^{-6} \times 5^{-17} \times 7^{-3} \times 11^2 \end{aligned}$$

$512 = 2\times 256 = 2^2 \times 128 = 2^3 \times 64 = 2^3 \times (2^3)^2 = 2^{3+6} = 2^9$ et $243 = 3\times 81 = 3\times (3^2)^2 = 3^5$.

$$\begin{aligned} F &= (512 \times 0,000036^4)^3 \times (0,243^2 \times 90^5)^{-1} = (2^9)^3 \times (6^2\times 10^{-6})^{12} \times (3^5\times 10^{-3})^{-2} \times (3^2\times 10)^{-5} \\ &= 2^{27} \times (3\times 2)^{24} \times (2\times 5)^{-72} \times 3^{-10} \times (2\times 5)^6 \times 3^{-10} \times (2\times 5)^{-5} \\ &= 2^{27+24-72+6-5} \times 3^{24-10-10} \times 5^{-72+6-5} \\ &= 2^{-20} \times 3^4 \times 5^{-71} \end{aligned}$$