

C3F2 : Calculs avec puissances

Exercice 1 : (sur cette feuille) Mettre chaque calcul sous forme d'une puissance :

$$4^7 \times 4^{-3} = \dots \quad (-3)^{-7} \times (-3)^2 = \dots \quad \frac{5^3}{5^7} = \dots \quad \frac{6^3}{6^{-8}} = \dots$$
$$(3^5)^2 = \dots \quad 3^{-4} \times 3^{-5} = \dots \quad ((-2)^{-5})^2 = \dots$$

Exercice 2 : (sur ton cahier) Mettre chaque calcul sous forme d'une puissance :

$$A = (2^2)^3 ; B = (10^3)^2 \times 10^{-2} ; C = \frac{2^3}{2^8} ; D = \frac{3^9 \times 3^{-1}}{3^3} ; E = \frac{4^{-3} \times 4^7}{4^{-6} \times 4^{12}} ; F = \frac{5^6 \times 5^{-3}}{5^{-5} \times (5^2)^4}$$

C3F2 Correction

Exercice 1 :

$$4^7 \times 4^{-3} = 4^{7+(-3)} = 4^4 \quad (-3)^{-7} \times (-3)^2 = (-3)^{-7+2} = (-3)^{-5} \quad \frac{5^3}{5^7} = 5^{3-7} = 5^{-4} \quad \frac{6^3}{6^{-8}} = 6^{3-(-8)} = 6^{11}$$
$$(3^5)^2 = 3^{5 \times 2} = 3^{10} \quad 3^{-4} \times 3^{-5} = 3^{-4+(-5)} = 3^{-9} \quad ((-2)^{-5})^2 = (-2)^{-5 \times 2} = (-2)^{-10}$$

Exercice 2 : A = $(2^2)^3$;

B = $(10^3)^2 \times 10^{-2}$;

C = $\frac{2^3}{2^8}$;

$$A = 2^2 \times 2^2 \times 2^2 ;$$

$$B = 10^3 \times 10^3 \times 10^{-2} ;$$

$$C = \frac{2 \times 2 \times 2}{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2}$$

$$A = 2 \times 2 \times 2 \times 2 \times 2 \times 2 ;$$

$$B = \frac{10^3 \times 10^3}{10^2} ;$$

$$C = \frac{1}{2^5} ;$$

$$A = 2^6 ;$$

$$B = 10^4 ;$$

$$C = 2^{-5}$$

$$D = \frac{3^9 \times 3^{-1}}{3^3} = \frac{3^9 \times 1}{3^3} = \frac{3^8}{3^3} = 3^5$$

$$E = \frac{4^{-3} \times 4^7}{4^{-6} \times 4^{12}} = \frac{4^4}{4^6} = 4^{-2} ; F = \frac{5^6 \times 5^{-3}}{5^{-5} \times (5^2)^4} = \frac{5^3}{5^{-5} \times 5^8} = \frac{5^3}{5^3} = 5^0$$