

Correction du devoir n° 2 - 3ème

Ex 1: 1) $(6^5)^{-2} = 6^{5 \times (-2)} = 6^{-10}$, $7^8 \times 7^{-13} = 7^{8+(-13)} = 7^{-5}$
 $(42^{-3})^{-7} = 42^{(-3) \times (-7)} = 42^{21}$; $(-2)^5 \times 13^5 = (-2 \times 13)^5 = (-26)^5$
 $\frac{48^{25}}{12^{25}} = \left(\frac{48}{12}\right)^{25} = 4^{25}$; $\frac{14^{-8}}{14^{-15}} = 14^{-8-(-15)} = 14^7$

2) $A = 5 - 3 \times 2^{-3}$
 $= 5 - \frac{3}{2^3}$
 $= 5 - \frac{3}{8}$
 $= \frac{40}{8} - \frac{3}{8}$
 $= \frac{37}{8} = 4,625$

$B = \frac{-3^2 - 3 \times (-2)}{2^2}$
 $= \frac{-9 + 6}{4}$
 $= \frac{-3}{4} = -0,75$

3) $C = 41 \times 10^5 \times 3 \times 10^8$
 $= 41 \times 3 \times 10^5 \times 10^8$
 $= 123 \times 10^{13}$
 $= \underline{1,23 \times 10^{15}}$

$D = \frac{36 \times 10^{-7}}{48 \times 10^8}$
 $D = \frac{3}{4} \times 10^{-7-8}$
 $D = 0,75 \times 10^{-15}$
 $D = \underline{7,5 \times 10^{-16}}$

Ex 2: 1) $360 = 36 \times 10 = 6 \times 6 \times 2 \times 5 = 3 \times 2 \times 3 \times 2 \times 2 \times 5$
 donc $\underline{360 = 2^3 \times 3^2 \times 5}$

504	2
252	2
126	2
63	3
21	3
7	7
1	

donc $\underline{504 = 2^3 \times 3^2 \times 7}$

2) $\frac{360}{504} = \frac{\cancel{2^3} \times \cancel{3^2} \times 5}{\cancel{2^3} \times \cancel{3^2} \times 7} = \frac{5}{7}$

Ex 3 (Bonus): $48 = 1 \times 48 = 2 \times 24 = 3 \times 16 = 4 \times 12 = 6 \times 8$

Les diviseurs de 48 sont 1, 2, 3, 4, 6, 8, 12, 16, 24 et 48