LA PROVIDENCE – MONTPELLIER **CORRIGE – M. QUET**

EXERCICE 1 - Calculer :

a.	$(-4)^3 =$	$(-4) \times (-4) \times (-4)$	$= -64$
b.	$5^4 =$	$5 \times 5 \times 5 \times 5$	$= 625$
c.	$(-6)^3 =$	$(-6) \times (-6) \times (-6)$	$= -216$
d.	$2^6 =$	$2 \times 2 \times 2 \times 2 \times 2 \times 2$	$= 64$
e.	$(-10)^3 =$	$(-10) \times (-10) \times (-10)$	$= -1\,000$
f.	$2^8 =$	$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$	$= 256$
g.	$(-3)^4 =$	$(-3) \times (-3) \times (-3) \times (-3)$	$= 81$
h.	$(0,1)^3 =$	$0,1 \times 0,1 \times 0,1$	$= 0,001$
i.	$(-5)^5 =$	$(-5) \times (-5) \times (-5) \times (-5) \times (-5)$	$= -3\,125$
j.	$(-100)^5 =$	$(-100) \times (-100) \times (-100) \times (-100) \times (-100)$	$= -10\,000\,000\,000$

EXERCICE 2 - Calculer :

a.	$4^{-3} =$	$\frac{1}{4 \times 4 \times 4}$	$= \frac{1}{64}$
b.	$(-2)^{-5} =$	$\frac{1}{(-2)^5} = \frac{1}{(-2)\times(-2)\times(-2)\times(-2)\times(-2)}$	$= \frac{1}{-32} = -\frac{1}{32}$
c.	$3^{-4} =$	$\frac{1}{3^4} = \frac{1}{3\times3\times3\times3}$	$= \frac{1}{81}$
d.	$(-10)^{-4} =$	$\frac{1}{(-10)^4} = \frac{1}{(-10)\times(-10)\times(-10)\times(-10)}$	$= -\frac{1}{10\,000}$
e.	$(-0,2)^5 =$	$(-0,2) \times (-0,2) \times (-0,2) \times (-0,2) \times (-0,2)$	$= -0,000\,32$
f.	$\left(\frac{1}{4}\right)^3 =$	$\frac{1}{4}\times\frac{1}{4}\times\frac{1}{4}$	$= \frac{1}{64}$
g.	$\left(-\frac{2}{3}\right)^4 =$	$\left(-\frac{2}{3}\right)\times\left(-\frac{2}{3}\right)\times\left(-\frac{2}{3}\right)\times\left(-\frac{2}{3}\right)$	$= \frac{16}{81}$
h.	$\left(-\frac{3}{4}\right)^2 =$	$\left(-\frac{3}{4}\right)\times\left(-\frac{3}{4}\right)$	$= \frac{9}{16}$
i.	$\left(-\frac{1}{5}\right)^{-3} =$	$\frac{1}{\left(-\frac{1}{5}\right)^3} = \frac{1}{\left(-\frac{1}{5}\right)\times\left(-\frac{1}{5}\right)\times\left(-\frac{1}{5}\right)} = -\frac{1}{\frac{1}{125}}$	$= -125$
j.	$\left(-\frac{2}{5}\right)^{-4} =$	$\frac{1}{\left(-\frac{2}{5}\right)^4} = \frac{1}{\left(-\frac{2}{5}\right)\times\left(-\frac{2}{5}\right)\times\left(-\frac{2}{5}\right)\times\left(-\frac{2}{5}\right)} = \frac{1}{\frac{16}{625}}$	$= \frac{625}{16}$

EXERCICE 3 - Donner le résultat des calculs suivants sous la forme « a^n » :

$5^2 \times 5^4 = \mathbf{5^6}$	$4^{-3} \times 4^8 = 4^{-3+8} = 4^5$	$(-6)^{-7}\times(-6)^2 = \mathbf{(-6)^{-7+2} = (-6)^{-5}}$	$(-3)^7\times(-3)^{-4} = \mathbf{(-3)^{7-4} = (-3)^3}$
$5^{-3}\times5^{-1}\times5^8 = \mathbf{5^{-3-1+8} = 5^4}$	$7^9 \times 7^{-8} \times 7^{-3} = \mathbf{7^{9-8-3} = 7^{-2}}$	$(-8)^2\times(-8)^{-5}\times(-8)^{-1} = \mathbf{(-8)^{-4}}$	$9^2\times9^{-1}\times9^{-7}\times9^{-4} = \mathbf{9^{2-1-7-4} = 9^{-10}}$

PUISSANCES ENTIERES D'UN NOMBRE RELATIF — EXERCICE 2

$\frac{5^7}{5^3} = \mathbf{5^4}$	$\frac{7^{-4}}{7^3} = 7^{-4-3} = 7^{-7}$	$\frac{(-6)^{-6}}{(-6)^{-1}} = (-6)^{-6-(-1)} = (-6)^{-6+1} = (-6)^{-5}$	$\frac{(-5)^6}{(-5)^{-16}} = (-5)^{6-(-16)} = (-5)^{6+16} = (-5)^{22}$
$\frac{(-1)^{-12}}{(-1)^{-8}} = (-1)^{-12-(-8)} = (-1)^{-4}$	$\frac{23^{-14}}{23^{-21}} = 23^{-14-(-21)} = 23^{-14+21} = 23^7$	$\frac{(-3)^{-9}}{(-3)^6} = (-3)^{-9-6} = (-3)^{-15}$	$\frac{2^{-3}}{2^3} = 2^{-3-3} = 2^{-6}$
$\left(3^{-2}\right)^7 = \mathbf{3^{-14}}$	$\left((-5)^{-7}\right)^{-1} = (-5)^{-7\times(-1)} = (-5)^7$	$\left((-2)^4\right)^{-3} = (-2)^{4\times(-3)} = (-2)^{-12}$	$\left(12^7\right)^3 = 12^{7\times3} = 12^{21}$
$\left(8^{-8}\right)^8 = 8^{-8\times8} = 8^{-64}$	$\left((-9)^{-7}\right)^{-2} = (-9)^{-7\times(-2)} = (-9)^{14}$	$\left((-0,6)^{-11}\right)^{-3} = (-0,6)^{-11\times(-3)} = (-0,6)^{33}$	$\left(7^{-8}\right)^0 = 1$