

**EXERCICE 1 :**

Donner le résultat sous la forme « 10<sup>n</sup> » :

$$A = 10^4 \times 10^{-8} \times 10^5 \qquad B = (10^{-2})^3 \times (10^3)^4$$

$$C = \frac{10^4 \times 10^{-1} \times 10^{-5}}{10^{-7} \times 10^6 \times 10^{-3}} \qquad D = \frac{(10^{-5})^6}{(10^4)^{-8}}$$

$$E = \frac{\frac{10^4}{10^{-5}}}{\frac{10^{-3}}{10^2}} \qquad F = \left( \left( (10^{-2})^3 \right)^{-4} \right)^{-1}$$

**EXERCICE 2**

Donner le résultat sous la forme « 10<sup>n</sup> » :

$$A = 10^{-2} \times 10^9 \times 10 \times 10^2 \times 10^{-5}$$

$$B = \frac{10^6}{10^{-2}} \times \frac{10^{-2}}{10^{-5}} \times \frac{10^{-5}}{10^4}$$

$$C = 10^4 \times \frac{10^6}{10^9} \times \frac{10^{-4}}{10^0} \times \frac{1}{10^5}$$

$$D = \frac{(10^{-2})^3}{(10^{-1})^4} \times \frac{(10^{-8})^{-2}}{(10^{-5})^3}$$

$$E = (10^{-9} \times 10^{-3} \times 10^{14} \times 10 \times 0,1)^{-2}$$

$$F = \left[ \frac{10^{-3}}{10^{-5}} \times \left( \frac{10^1}{10^{-1}} \right)^{-3} \right]^{-5}$$

**EXERCICE 3 :** Compléter les pointillés :

$10^4 \times 10^{\dots} = 10^{-1}$	$10^{-5} \times 10^{\dots} \times 10^{-2} = 10^3$
$\frac{1}{10^{\dots}} = 10^6$	$\frac{10^{-3}}{10^{\dots}} = 10^{-5}$
$\frac{10^{-4} \times 10^9}{10^{\dots} \times 10^{-2}} = 10^8$	$\frac{10^{-1} \times 10^5 \times 10^{\dots}}{10^{-3} \times 10^7 \times 10^2} = 10^{-3}$
$(10^3)^{\dots} = 10^{-6}$	$(10^{\dots})^{-4} = 10^{12}$
$\left[ (10^{-1})^{-3} \right]^{\dots} = 10^{-9}$	$\frac{1}{(10^{-5})^{\dots}} = 10^{15}$
$10^{11} \times 10^{\dots} = 10^{-5} \times 10^9$	$\frac{10^{-3}}{10^{\dots}} = \frac{10^{-5}}{10^{-9}}$

**EXERCICE 4**

Calculer :

<b>a.</b> $54\,321,098\,76 \times 10^2 = \mathbf{5\,432\,109,876}$
<b>b.</b> $54\,321,098\,76 \times 10^{-2} =$
<b>c.</b> $54\,321,098\,76 \times 10^4 =$
<b>d.</b> $54\,321,098\,76 \times 10^{-3} =$
<b>e.</b> $54\,321,098\,76 \times 10^5 =$
<b>f.</b> $54\,321,098\,76 \times 10^{-4} =$
<b>g.</b> $54\,321,098\,76 \times 10^{-1} =$
<b>h.</b> $54\,321,098\,76 \times 10^7 =$
<b>i.</b> $54\,321,098\,76 \times 10^{-6} =$
<b>j.</b> $54\,321,098\,76 \times 10^0 =$

**EXERCICE 5**

Calculer :

<b>a.</b> $6,08 \times 10^5 = \mathbf{608\,000}$
<b>b.</b> $-87,52 \times 10^3 =$
<b>c.</b> $8,0002 \times 10^3 =$
<b>d.</b> $0,00875 \times 10^7 =$
<b>e.</b> $67,04 \times 10^{-1} =$
<b>f.</b> $-965,297 \times 10^{-2} =$
<b>g.</b> $-6,153372 \times 10^4 =$
<b>h.</b> $807,5 \times 10^{-5} =$
<b>i.</b> $953\,000\,000 \times 10^{-5} =$
<b>j.</b> $-41\,765\,300 \times 10^{-2} =$

**EXERCICE 6**

Compléter les pointillés :

<b>a.</b> $6,08 \times 10^{\dots} = 608\,000$
<b>b.</b> $87,52 \times 10^{\dots} = 875,2$
<b>c.</b> $764,987 \times 10^{\dots} = 7,64987$
<b>d.</b> $9\,875 \times 10^{\dots} = 98\,750\,000$
<b>e.</b> $49\,518 \times 10^{\dots} = 0,49518$
<b>f.</b> $642,063\,2 \times 10^{\dots} = 642\,063\,200$
<b>g.</b> $40\,328,16 \times 10^{\dots} = 0,000\,040\,328\,16$
<b>h.</b> $923,923 \times 10^{\dots} = 9\,239\,230\,000\,000$
<b>i.</b> $328\,143,684 \times 10^{\dots} = 0,000\,000\,032\,814\,368\,4$
<b>j.</b> $32,81 \times 10^{\dots} = 3\,281\,000\,000\,000\,000\,000\,000$

**CORRIGE – M. QUET**

**EXERCICE 1 :**

$$A = 10^4 \times 10^{-8} \times 10^5 = 10^{4-8+5} = 10^1$$

$$B = (10^{-2})^3 \times (10^3)^4 = 10^{-2 \times 3} \times 10^{3 \times 4} = 10^{-6} \times 10^{12} = 10^6$$

$$C = \frac{10^4 \times 10^{-1} \times 10^{-5}}{10^{-7} \times 10^6 \times 10^{-3}} = \frac{10^{4-1-5}}{10^{-7+6-3}} = \frac{10^{-2}}{10^{-4}} = 10^{-2-(-4)} = 10^2$$

$$D = \frac{(10^{-5})^6}{(10^4)^{-8}} = \frac{10^{-5 \times 6}}{10^{4 \times (-8)}} = \frac{10^{-30}}{10^{-32}} = 10^{-30-(-32)} = 10^2$$

$$E = \frac{10^4}{10^{-3}} = \frac{10^4}{10^{-5}} \times \frac{10^2}{10^{-3}} = \frac{10^{4+2}}{10^{-5-3}} = \frac{10^6}{10^{-8}} = 10^{6-(-8)} = 10^{14}$$

$$F = \left( \left( (10^{-2})^3 \right)^{-4} \right)^{-1} = \left( (10^{-2 \times 3})^{-4} \right)^{-1} = \left( 10^{-6 \times (-4)} \right)^{-1} = 10^{24 \times (-1)} = 10^{-24}$$

**EXERCICE 2**

$$A = 10^{-2} \times 10^9 \times 10 \times 10^2 \times 10^{-5} = 10^{-2+9+1+2-5} = 10^5$$

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

$$C = 10^4 \times \frac{10^6}{10^9} \times \frac{10^{-4}}{10^0} \times \frac{1}{10^5} = 10^4 \times 10^{6-9} \times 10^{-4-0} \times 10^{-5} = 10^4 \times 10^{-3} \times 10^{-4} \times 10^{-5} = 10^{4-3-4-5} = 10^{-8}$$

$$D = \frac{(10^{-2})^3 \times (10^{-8})^{-2}}{(10^{-1})^4 \times (10^{-5})^3} = \frac{10^{-2 \times 3} \times 10^{-8 \times (-2)}}{10^{-1 \times 4} \times 10^{-5 \times 3}} = \frac{10^{-6} \times 10^{16}}{10^{-4} \times 10^{-15}} = 10^{-6-(-4)} \times 10^{16-(-15)} = 10^{-6+4} \times 10^{16+15} = 10^{-2} \times 10^{31} = 10^{-2+31} = 10^{29}$$

$$E = (10^{-9} \times 10^{-3} \times 10^{14} \times 10 \times 0,1)^{-2} = (10^{-9-3+14} \times 1)^{-2} = (10^2)^{-2} = 10^{2 \times (-2)} = 10^{-4}$$

$$F = \left[ \frac{10^{-3}}{10^{-5}} \times \left( \frac{10^1}{10^{-1}} \right)^{-3} \right]^{-5} = \left[ 10^{-3-(-5)} \times \left( 10^{1-(-1)} \right)^{-3} \right]^{-5} = \left[ 10^{-3+5} \times \left( 10^{1+1} \right)^{-3} \right]^{-5} = \left[ 10^2 \times \left( 10^2 \right)^{-3} \right]^{-5} = \left[ 10^2 \times 10^{2 \times (-3)} \right]^{-5} = \left[ 10^2 \times 10^{-6} \right]^{-5} = \left[ 10^{2-6} \right]^{-5} = \left[ 10^{-4} \right]^{-5} = 10^{-4 \times (-5)} = 10^{20}$$

**EXERCICE 3 :** Compléter les pointillés :

$10^4 \times 10^{-5} = 10^{-1}$	$10^{-5} \times 10^{10} \times 10^{-2} = 10^3$
$\frac{1}{10^{-6}} = 10^6$	$\frac{10^{-3}}{10^2} = 10^{-5}$
$\frac{10^{-4} \times 10^9}{10^{-1} \times 10^{-2}} = 10^8$	$\frac{10^{-1} \times 10^5 \times 10^{-1}}{10^{-3} \times 10^7 \times 10^2} = 10^{-3}$
$(10^3)^{-2} = 10^{-6}$	$(10^{-3})^{-4} = 10^{12}$
$\left[ (10^{-1})^{-3} \right]^{-3} = 10^{-9}$	$\frac{1}{(10^{-5})^3} = 10^{15}$
$10^{11} \times 10^{-7} = 10^{-5} \times 10^9$	$\frac{10^{-3}}{10^{-7}} = \frac{10^{-5}}{10^{-9}}$

**EXERCICE 4**

<b>a.</b> $54\,321,098\,76 \times 10^2 =$ <b>5 432 109,876</b>
<b>b.</b> $54\,321,098\,76 \times 10^{-2} =$ <b>543,210 987 6</b>
<b>c.</b> $54\,321,098\,76 \times 10^4 =$ <b>543 210 987,6</b>
<b>d.</b> $54\,321,098\,76 \times 10^{-3} =$ <b>54,321 098 76</b>
<b>e.</b> $54\,321,098\,76 \times 10^5 =$ <b>5 432 109 876</b>
<b>f.</b> $54\,321,098\,76 \times 10^{-4} =$ <b>5,432 109 876</b>
<b>g.</b> $54\,321,098\,76 \times 10^{-1} =$ <b>5 432,109 876</b>
<b>h.</b> $54\,321,098\,76 \times 10^7 =$ <b>543 210 987 600</b>
<b>i.</b> $54\,321,098\,76 \times 10^{-6} =$ <b>0,054 321 098 76</b>
<b>j.</b> $54\,321,098\,76 \times 10^0 =$ <b>54 321,098 76</b>

**EXERCICE 5**

<b>a.</b> $6,08 \times 10^5 =$ <b>608 000</b>
<b>b.</b> $-87,52 \times 10^3 =$ <b>-87 520</b>

**c.**  $8,0002 \times 10^3 = 8\ 000,2$

**d.**  $0,00875 \times 10^7 = 87\ 500$

**e.**  $67,04 \times 10^{-1} = 6,704$

**f.**  $-965,297 \times 10^{-2} = -9,652\ 97$

**g.**  $-6,153372 \times 10^4 = -61\ 533,72$

**h.**  $807,5 \times 10^{-5} = 0,008\ 075$

**i.**  $953\ 000\ 000 \times 10^{-5} = 9\ 530$

**j.**  $-41\ 765\ 300 \times 10^{-2} = -417\ 653$

**EXERCICE 6**

Compléter les pointillés :

**a.**  $6,08 \times 10^{\dots} = 608\ 000$

**b.**  $87,52 \times 10^1 = 875,2$

**c.**  $764,987 \times 10^{-2} = 7,64987$

**d.**  $9\ 875 \times 10^4 = 98\ 750\ 000$

**e.**  $49\ 518 \times 10^{-5} = 0,495\ 18$

**f.**  $642,063\ 2 \times 10^6 = 642\ 063\ 200$

**g.**  $40\ 328,16 \times 10^{-9} = 0,000\ 040\ 328\ 16$

**h.**  $923,923 \times 10^{10} = 9\ 239\ 230\ 000\ 000$

**i.**  $328\ 143,684 \times 10^{-13} = 0,000\ 000\ 032\ 814\ 368\ 4$

**j.**  $32,81 \times 10^{20} = 3\ 281\ 000\ 000\ 000\ 000\ 000\ 000$