

activités mentales 4 page 307

Sésamath

Maths 1S



Simplifier les nombres suivants :

1 $\left(\frac{1}{3}\right)^4 \times \left(\frac{2}{3}\right)^2$

2 $14 \times \left(\frac{2}{7}\right)^2 \times \left(\frac{5}{7}\right)^3$

3 $1000 \times \left(\frac{1}{10}\right)^2 \times \left(\frac{9}{10}\right)^8$

4 $45 \times \left(\frac{2}{3}\right)^5 \times \left(\frac{6}{5}\right)^3$

$$1 \quad \left(\frac{1}{3}\right)^4 \times \left(\frac{2}{3}\right)^2$$

$$\begin{aligned} 1 \quad & \left(\frac{1}{3}\right)^4 \times \left(\frac{2}{3}\right)^2 \\ & \left(\frac{1}{3}\right)^4 \times \left(\frac{2}{3}\right)^2 = \frac{1^4 \times 2^2}{3^4 \times 3^2} = \frac{2^2}{3^6} \end{aligned}$$

$$2 \quad 14 \times \left(\frac{2}{7}\right)^2 \times \left(\frac{5}{7}\right)^3$$

$$\begin{aligned} 2 \quad 14 \times \left(\frac{2}{7}\right)^2 \times \left(\frac{5}{7}\right)^3 \\ 14 \times \left(\frac{2}{7}\right)^2 \times \left(\frac{5}{7}\right)^3 &= \frac{14 \times 2^2 \times 5^3}{7^2 \times 7^3} = \frac{2 \times 7 \times 2^2 \times 5^3}{7^5} = \frac{2^3 \times 5^3}{7^4} \\ 14 \times \left(\frac{2}{7}\right)^2 \times \left(\frac{5}{7}\right)^3 &= \frac{10^3}{7^4} \end{aligned}$$

3 $1000 \times \left(\frac{1}{10}\right)^2 \times \left(\frac{9}{10}\right)^8$

$$\begin{aligned} \text{3 } & 1000 \times \left(\frac{1}{10}\right)^2 \times \left(\frac{9}{10}\right)^8 \\ & 1000 \times \left(\frac{1}{10}\right)^2 \times \left(\frac{9}{10}\right)^8 = \frac{1000 \times 1^2 \times 9^8}{10^2 \times 10^8} = \frac{10^3 \times 9^8}{10^{10}} = \frac{9^8}{10^7} \end{aligned}$$

$$4 \quad 45 \times \left(\frac{2}{3}\right)^5 \times \left(\frac{6}{5}\right)^3$$

$$4 \quad 45 \times \left(\frac{2}{3}\right)^5 \times \left(\frac{6}{5}\right)^3$$

$$45 \times \left(\frac{2}{3}\right)^5 \times \left(\frac{6}{5}\right)^3 = \frac{45 \times 2^5 \times 6^3}{3^5 \times 5^3} = \frac{5 \times 3^2 \times 2^5 \times 2^3 \times 3^3}{3^5 \times 5^3}$$

$$45 \times \left(\frac{2}{3}\right)^5 \times \left(\frac{6}{5}\right)^3 = \frac{5 \times 3^5 \times 2^8}{3^5 \times 5^3} = \frac{2^8}{5^2}$$