

PUISSANCES

calculs d'une puissances d'un nombre : correction

Exercice 1 : Calculer

$$7^4 = 2401$$

$$8^5 = 32768$$

$$10^6 = 1\,000\,000$$

$$9^{-5} = \left(\frac{1}{9}\right)^5 = \frac{1}{59049}$$

$$(-2)^7 = -128$$

$$\left(\frac{1}{6}\right)^3 = \frac{1}{216}$$

$$-3^6 = -729$$

$$\left(\frac{3}{4}\right)^5 = \frac{243}{1024}$$

$$\left(\frac{2}{5}\right)^{-4} = \left(\frac{5}{2}\right)^4 = \frac{625}{16}$$

$$\frac{5^3}{2} = \frac{125}{2}$$

$$(-3)^4 = 81$$

$$-2^8 = -256$$

$$\left(\frac{2}{3}\right)^4 = \frac{16}{81}$$

$$(-5)^3 = -125$$

$$2^{-3} = \left(\frac{1}{2}\right)^3 = \frac{1}{8}$$

$$\left(\frac{5}{4}\right)^3 = \frac{125}{64}$$

$$\frac{1^2}{6} = \frac{1}{6}$$

$$\left(\frac{3}{2}\right)^{-5} = \left(\frac{2}{3}\right)^5 = \frac{32}{243}$$

Exercice 2 : calculer

$A = (3 \times 5)^2$ $A = 15^2$ $A = 225$	$B = 3 \times 5^2$ $B = 3 \times 25$ $B = 75$
$C = 3^2 + 5$ $C = 9 + 5$ $C = 14$	$D = 2^3 + 4^2$ $D = \left(\frac{1}{2}\right)^3 + \left(\frac{1}{4}\right)^2$ $D = \frac{1}{8} + \frac{1}{16}$ $D = \frac{2}{16} + \frac{1}{16}$ $D = \frac{3}{16}$
$E = (4 - 2)^3$ $E = 2^3$ $E = 8$	$F = 4^3 - 16$ $F = 64 - 16$ $F = 48$
$G = 2^{-3} \times 3^{-2}$ $G = \left(\frac{1}{2}\right)^3 \times \left(\frac{1}{3}\right)^2$ $G = \frac{1}{8} \times \frac{1}{9}$ $G = \frac{1}{72}$	$G = 3^2 + 5^2$ $G = 9 + 25$ $G = 34$
$I = (4 + 2)^2$ $I = 6^2$ $I = 36$	$J = 3^{-2} \times 2^{-3}$ $J = \left(\frac{1}{3}\right)^2 + \left(\frac{1}{2}\right)^3$ $J = \frac{1}{9} + \frac{1}{8}$

	$J = \frac{8}{72} + \frac{9}{72}$ $J = \frac{17}{72}$
$K = 10^2 \times 5$ $K = 100 \times 5$ $K = 500$	$L = 3^2 - 5$ $L = 9 - 5$ $L = 4$
$M = 4^3 - 28$ $M = 64 - 28$ $M = 36$	$N = 2 \times 4^{-3}$ $N = 2 \times \left(\frac{1}{4}\right)^3$ $N = \frac{2 \times 1}{64}$ $N = \frac{2}{64}$ $N = \frac{1 \times 2}{2 \times 32}$ $N = \frac{1}{32}$
$O = 3^3 + 14$ $O = 27 + 14$ $O = 41$	$P = 2^3 + 4^3$ $P = 8 + 64$ $P = 72$
$Q = 2 \times 3^2 + 4$ $Q = 2 \times 9 + 4$ $Q = 18 + 4$ $Q = 22$	$R = 2 + 3^{-2} \times 4$ $R = 2 + \left(\frac{1}{3}\right)^2 \times 4$ $R = 2 + \frac{1}{9} \times 4$ $R = 2 + \frac{4}{9}$ $R = \frac{18}{9} + \frac{4}{9}$

	$R = \frac{22}{9}$
$S = 2 \times 3 + 4^2$ $S = 6 + 16$ $S = 22$	$T = 2 + 3 \times 4^2$ $T = 2 + 3 \times 16$ $T = 2 + 48$ $T = 50$

$U = 2^2 \times 3 - 4$ $U = 4 \times 3 - 4$ $U = 12 - 4$ $U = 8$	$V = 2^2 + 3 \times 4$ $V = 4 + 12$ $V = 16$
$W = 2 \times 3^2 - 11$ $W = 2 \times 9 - 11$ $W = 18 - 11$ $W = 7$	$X = 13 + 4^2 \times 5$ $X = 13 + 16 \times 5$ $X = 13 + 80$ $X = 93$

Exercise 3 Calculer.

$$A = -2^2 \times 3 + 4$$

$$A = -4 \times 3 + 4$$

$$A = -12 + 4$$

$$A = -8$$

$$B = (2 \times 3)^2 + 4 \times 5$$

$$B = 6^2 + 20$$

$$B = 36 + 20$$

$$B = 56$$

$$C = -7 \times (-2)^3 - 2 \times (-4)^2$$

$$C = -7 \times (-8) - 2 \times 16$$

$$C = 56 - 32$$

$$C = 24$$

$$D = 2^{-3} + 3^2$$

$$D = \left(\frac{1}{2}\right)^3 + 9$$

$$D = \frac{1}{8} + 9$$

$$D = \frac{1}{8} + \frac{72}{8}$$

$$D = \frac{73}{8}$$