

# Logarithme décimal (Exercices)

## Exercice 1

En utilisant les propriétés du log, calculer sans calculatrice

$$1/ A = \log(500) - \log(5)$$

$$2/ B = \log(30) + \log(700) - \log(21)$$

$$3/ C = \log(5) + \log(8) + \log(25)$$

## Exercice 2

Exprimer en fonction de  $\log(a)$  et/ou  $\log(b)$

$$1/ A = \log\left(\frac{a}{b}\right) - \log(b)$$

$$2/ B = 2\log\left(\frac{a}{b}\right) + \log\left(\frac{b}{a}\right) - \log\left(\frac{10}{a}\right)$$

$$3/ C = 10\log(a) + 7\log\left(\frac{b}{a}\right) - 3\log(a)$$

$$4/ D = \log(100) \times \log(a)$$

## Exercice 3

Résoudre les équations suivantes

$$1/ \log(x) = 3$$

$$2/ \log(x) = -4$$

$$3/ \log(x + 4) + \log(x) = 0$$

$$4/ \log(x + 3) + \log(x + 5) = \log 15$$

$$5/ \log(x + 1) = 3 - \log(1 - 2x)$$

$$6/ \log(1 - x) + \log(x + 1) = -2$$

$$7/ \log(x + 1) + \log(x - 1) = \log 3 + 4\log 2$$

$$8/ \log(x^2 + 5x + 6) = \log(x + 11)$$

## Exercice 4

Résoudre les inéquations suivantes

$$1/ \log x > \frac{1}{2}$$

$$2/ 2\log x \leq -3$$

$$3/ \log(2x + 1) + \log(x + 3) < 1$$

$$4/ \log 24 + \log(3 - x) < \log(x + 1) + \log(25x - 49)$$

$$5/ \log(3x^2 - x - 2) > \log(6x + 4)$$

$$6/ \log(x + 2) + \log(x - 4) < 2\log(x - 1)$$