Data sheet   Nines

N-form

Writing long decimals can be tedious especially when the same digit repeats in a decimal such as 0.999999   Also, it is easy to make a mistake in counting how many nines there are. In the case of long strings of nines, a coding system has been developed to get around this problem.

      0.999999 is written as 6N (or 'six nines')

This coding can be modified to deal with numbers such as 0.9999995

      0.9999995 is written as 6N5 (or 'six nines five')

Using this coding, 3N means 0.999, and 3N5 means 0.9995

Percentages

The coding can include percentages.

For example, 99% as a decimal is 0.99, which can be written as 2N

99.5% is 0.995, which can be written as 2N5

Uses

1   The purity of chemicals is often expressed in this way:

     a sample of oxygen is 99.9% pure (with 0.1% impurity).
     99.9% = 0.999 and this can be written as 3N

2   The reliability of systems such as a computer network:

     a system that is 99% reliable is one that works correctly 99% of the time.
     99% = 0.99 which can be written 2N

Questions   Nines

1

Write down the number *four nines*:

(a)   As a decimal   _ _ _ _ _ _

(b)   As a percentage   _ _ _ _ _ _

_____

2

Write down the number 0.995 in *N-form*.

                                    _ _ _ _ _ _ _ _ _ _ _ _ _ _

_____

3

A website is said to be *1N5* available to visit online.

(a)   Find the percentage of the time that the website is available.

                                    _ _ _ _ _ _ _ _ _ _ _ _ _ _

(b)   Work out the average number of minutes per day the site would be
           unavailable.

                                    _ _ _ _ _ _ _ _ _ _ _ _ _ _

_____

4

A certain metal is *4N5* pure by weight.
Work out the weight of the impurities in 100kg of the metal.
Give your answer in grams.

                                    _ _ _ _ _ _ _ _ _ _ _ _ _ _ g

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