Problem

Write formal descriptions of the following sets.

a. The set containing the numbers 1, 10, and 100

b. The set containing all integers that are greater than 5

c. The set containing all natural numbers that are less than 5

d. The set containing the string aba

e. The set containing the empty string

f. The set containing nothing at all

Step-by-step solution

Step 1 of 6

a.

Consider the given information:

The set containing the number of series of 10. It means n contain 10 and 10 to the power of m, contain the series of 0, 1, and 2, is as shown below:

$\{n : n = 10^m \text{ for some } m \in \{0,1,2\}\}$

Comment

Step 2 of 6

b.

Consider the given information:

The set contains the all integer number which is greater than 5.

Thus, the n which contains only those integer numbers which are greater than 5 is as shown below:

$\{n : n \text{ is an integer and } n > 5\}$

Comment

Step 3 of 6

c.

Consider the given information:

The set contains the all natural number which is less than 5.

Thus, the n which contains only those natural numbers which are less than 5 is as shown below:

$\{n : n \text{is a natural number and } n < 5\}$

Comment

Step 4 of 6

d.

Consider the given information:

The set contains the string which is aba.

Thus, the n which contains only the string ‘aba’, is as shown below:

$\{\text{n : n contains } \{\text{aba}\}\}.$

Comment

Step 5 of 6

e.

Consider the given information:

The set contains the empty string. Empty is denoted by ε.

Thus, the set which contains only the empty string, is as shown below:

$\{\varepsilon\}$

Comment

Step 6 of 6

f.

Consider the given information:

The set contains nothing, it means set contain only null. Null is denoted by ϕ.

Thus, the set which does not contains anything is as shown below:

$\varnothing$

Comment