Chapter 11

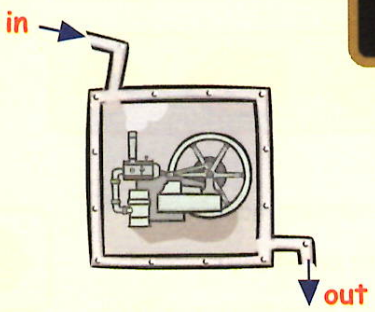
Number Machines

Use a number machine to follow instructions involving two calculations

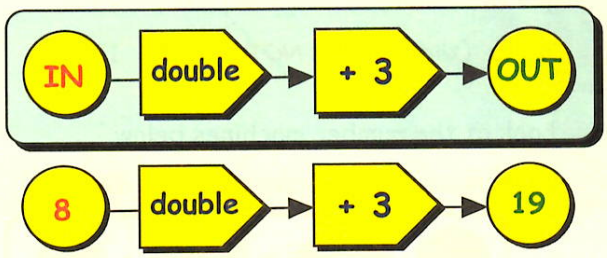
Remember :-

A **number machine** (or **function machine**) is the name for a mathematical rule which changes **one number** into **another**.

Sometimes this rule can involve two or more processes.



Example :- This number machine takes a number **IN** one side **doubles it** then adds 3 and pushes the answer **OUT** the other side.



The number **8** is put **IN** :-

19 comes **OUT**

Exercise 1

1. Look again at the function machine above.

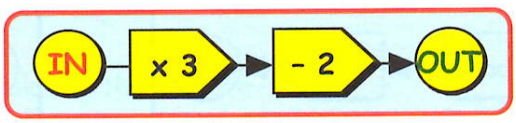
   a What comes **out** when you put **in** the number :-

   (i) 1 (ii) 10 (iii) 25 (iv) 2·3 (v) 0 ?

   b What number must have been put **in** to produce the answer :-

   (i) 9 (ii) 27 (iii) 333 (iv) 9·6 (v) 21·8 ?

2. Here is a new function machine.



   a What comes **out** of this machine when you put in the number :-

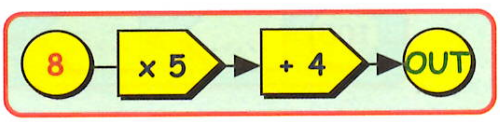
   (i) 9 (ii) 12 (iii) 8·5 (iv) 40 (v) 0·8 ?

   b What number must have been put **in** to produce the answer :-

   (i) 16 (ii) 43 (iii) 34 (iv) 2·5 (v) 298 ?

3. Look at these number machines. Write down what number comes **OUT** :-

   a



   b