

Function Machines

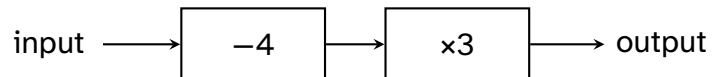
For Pearson Edexcel GCSE Mathematics (1MA1) • Foundation tier

Name _____

Total marks: **29**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 Here is a number machine.



(a) Work out the output when the input is 10

.....
(1)

(b) Work out the input when the output is -6

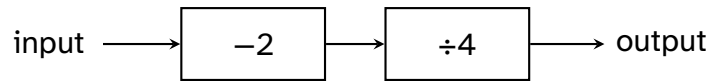
.....
(2)

(c) Ffion puts a number into the machine.
The output is double the number she put in.
Find the number Ffion put in.

.....
(2)

(Total for Question 1 is 5 marks)

2 Here is a number machine.



(a) Find the output when the input is 30

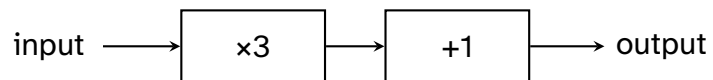
.....
(1)

(b) Find the input when the output is -3

.....
(2)

(Total for Question 2 is 3 marks)

3 Here is a number machine.



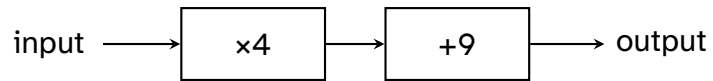
Complete the table.

input	2	5	
output	7		31

(2)

(Total for Question 3 is 2 marks)

4 Here is a number machine.



(a) Find the output when the input is 7

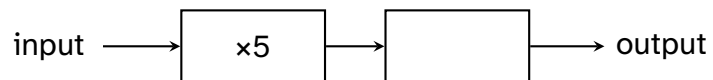
.....
(1)

(b) Find the input when the output is -15

.....
(2)

(Total for Question 4 is 3 marks)

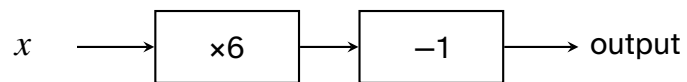
5 Here is a number machine.



When the input is 6, the output is 23
Complete the number machine.

.....
(2)
(Total for Question 5 is 2 marks)

6 The input of this number machine is x .



(a) Write an expression, in terms of x , for the output.

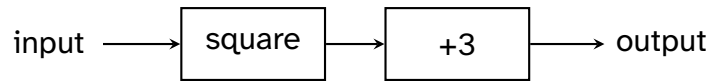
.....
(1)

(b) The output is 53
Find the value of x .

$x =$
(2)

(Total for Question 6 is 3 marks)

7 Here is a number machine.



(a) Find the output when the input is -4

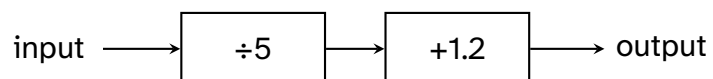
.....
(1)

(b) The output is 52
Find the two possible inputs.

..... and
(2)

(Total for Question 7 is 3 marks)

8 Here is a number machine.

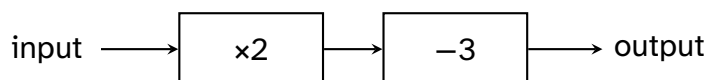


Find the output when the input is 8

.....
(1)

(Total for Question 8 is 1 mark)

9 Here is a number machine.



Maya says,

‘For any whole number input, the output is always odd.’

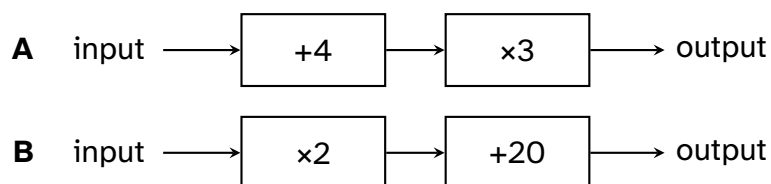
Is Maya correct?

You must give a reason for your answer.

(1)

(Total for Question 9 is 1 mark)

10 Here are two number machines.



The two machines have the same input.

They give the same output.

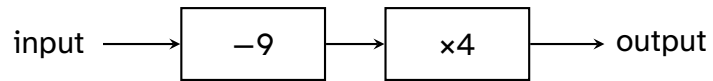
Work out the input.

.....

(3)

(Total for Question 10 is 3 marks)

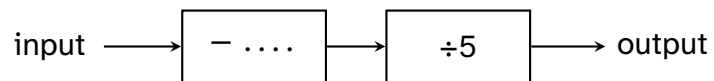
11 Here is a number machine.



(a) Work out the output when the input is 6

.....
(1)

(b) This number machine has a missing operation.



An input of 42 gives an output of 6
Complete the number machine.

(2)
(Total for Question 11 is 3 marks)
