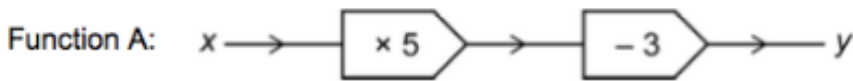


OCR GCSE 9-1 Functions PPQ [34]

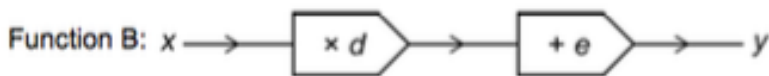
1.

Here is a function.



- (a) (i) Work out y when $x = -2$.
- (ii) Work out x when $y = 72$.
- (iii) Find the inverse of function A.

Here is another function.



- (b) The diagram below shows a composite function.



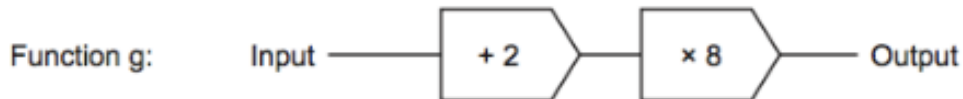
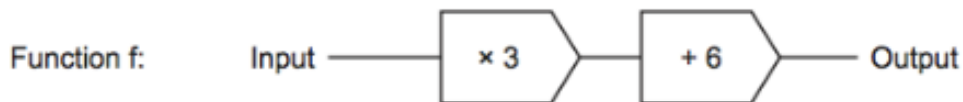
When $m = 4$, $n = 53$.
When $m = 9$, $n = 128$.

Find the values of d and e .

[8 marks]

2.

Two functions, f and g , are represented by these function machines.

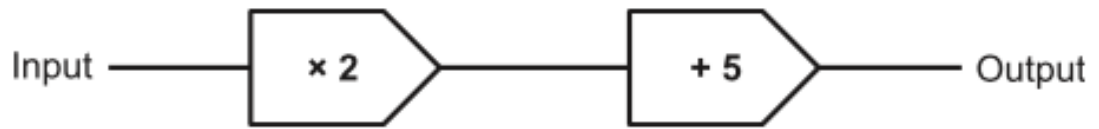


- (a) x is put into function f .
The output from function f is then put into function g .
Find a simplified expression for the output from function g .
- (b) A number is chosen.
This number is put into both function f and function g .
The output from both functions is the same.
Work out the number that was chosen.

[5 marks]

3.

(a) A function is represented by the following function machine.



- (i) A number is input into the machine.
The output is used as a new input.
The second output is 11.

Work out the number that was the **first input**.

- (ii) A number is input into the machine.
The output given is the same number.

Work out the number.

(b) Another function machine is shown below.



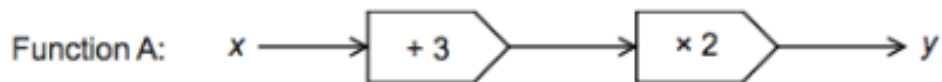
- If the Input is 3, the Output is 5.
If the Input is 7, the Output is 25.

Use this information to fill in the two boxes.

[8 marks]

4.

Here is a function.



(a) Complete the table of values for **function A**.

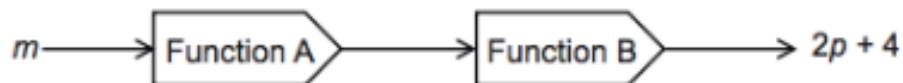
x	y
-5	
	11

Here is another function.



(b) Find the inverse function of **function B**.

(c) Here is a composite function.

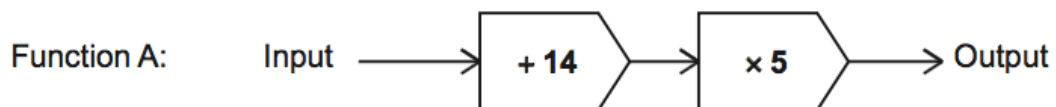


Find an expression for m in terms of p .
Give your answer in its simplest form.

[8 marks]

5.

Here is a function.



(a) The **output** of function A is x .

Write an algebraic expression, in terms of x , for the input of function A.

(b) A number, k , is put into function A.
The output is also k .

Find the value of k .

[5 marks]