

- 1 (a) Complete the number machine by writing the correct output on the dotted line.



(1)

- (b) Complete the number machine by writing the correct input on the dotted line.



(2)

Here is an incomplete number machine.

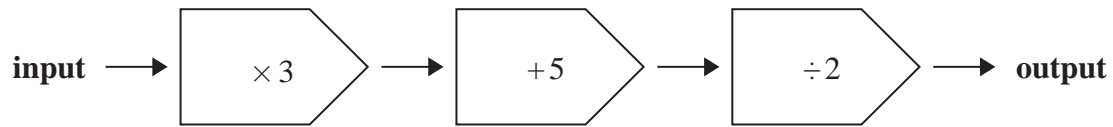


- (c) Complete the number machine.

(1)

(Total for Question 1 is 4 marks)

2 Here is a number machine.



(a) Work out the output when the input is 7

.....
(1)

(b) Work out the input when the output is 160

.....
(2)

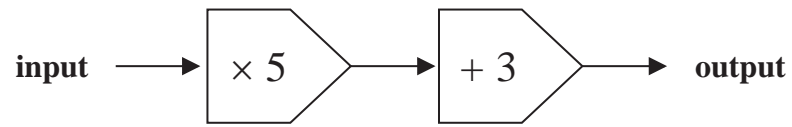
When the input is n , the output is P .

(c) Find a formula for P in terms of n .

.....
(2)

(Total for Question 2 is 5 marks)

3 Here is a number machine.

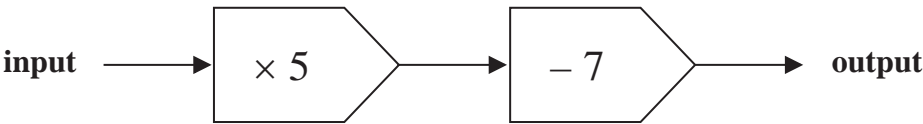


(b) Work out the input when the output is 108

.....
(2)

(Total for Question 3 is 2 marks)

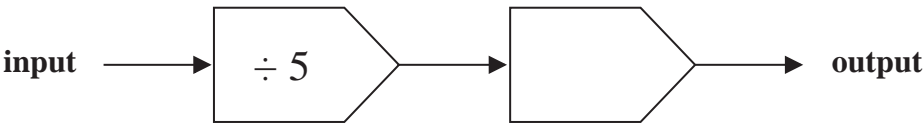
4 Here is a number machine.



(a) Work out the output when the input is 9

.....
(1)

Here is a different number machine.



When the input is 30 the output is 18

(b) Find a suitable way to complete the number machine.

(1)

The following rule is used to work out the total cost, in euros, of hiring a cement mixer.

Total cost = 8 euros per day plus 5 euros

James hires a cement mixer for 3 days.

(c) Work out the cost to James of hiring the cement mixer.

..... euros
(1)

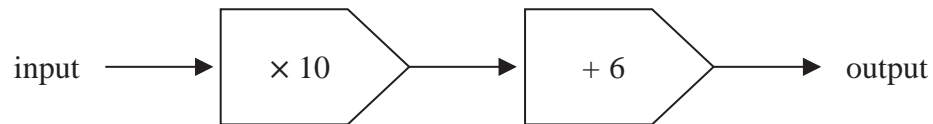
The cost to Sophia of hiring a cement mixer is 61 euros.

(d) For how many days does Sophia hire the cement mixer?

..... days
(2)

(Total for Question 4 is 5 marks)

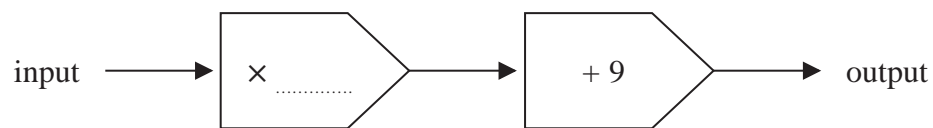
5 Here is a number machine.



(a) Work out the output when the input is 14

.....
(1)

Here is a different number machine.



When the input is 11 the output is 64

(b) Write a number on the dotted line to complete the number machine.

(2)

(Total for Question 5 is 3 marks)