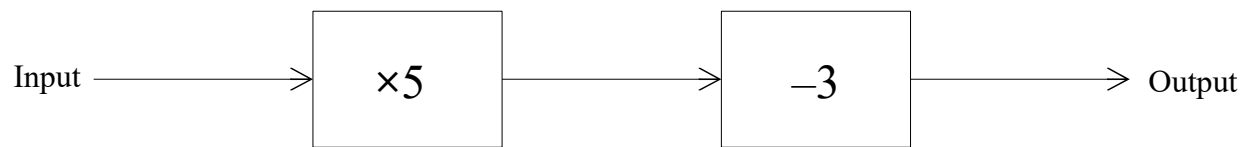


1 Here is a number machine.



(a) What is the **output** when the **input** is 7?

.....  
(1)

Here is a different number machine.



When the input is 9 the output is 2.

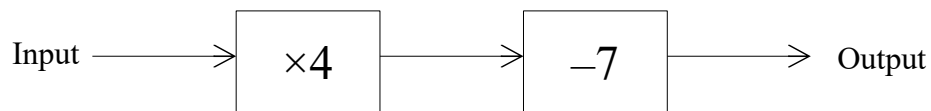
(b) Complete the number machine.

(1)

---

(Total for question 1 is 2 marks)

2 Here is a number machine.



(a) What is the **output** when the **input** is 6?

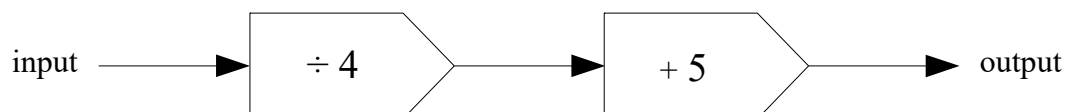
.....  
(1)

(b) What is the **input** when the **output** is 25?

.....  
(2)

(Total for question 2 is 3 marks)

3 Here is a number machine.



(a) Find the **output** when the **input** is 12

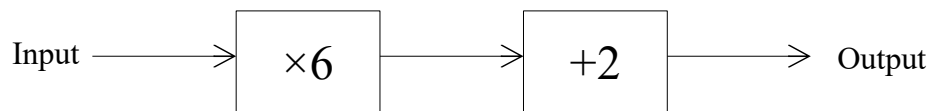
.....  
(1)

(b) Find the **input** when the **output** is 13

.....  
(2)

(Total for question 3 is 3 marks)

4 Here is a number machine.



(a) What is the **output** when the **input** is 3?

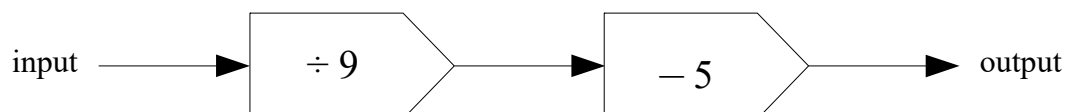
.....  
(1)

(b) What is the **input** when the **output** is 44?

.....  
(2)

(Total for question 4 is 3 marks)

5 Here is a number machine.



(a) Find the **output** when the **input** is 81

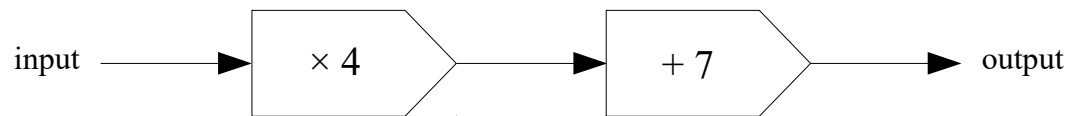
.....  
(1)

(b) Find the **input** when the **output** is 0

.....  
(2)

(Total for question 5 is 3 marks)

6 Here is a number machine.



(a) Find the output when the input is 5

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

.....  
(1)

(c) Find the input when the output is 71

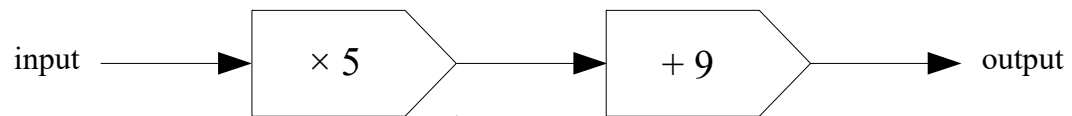
.....  
(1)

.....  
(2)

**(Total for question 6 is 4 marks)**

---

7 Here is a number machine.



(a) Find the output when the input is 5

(b) Find the output when the input is  $-2$

.....  
(1)

(c) Find the input when the output is 64

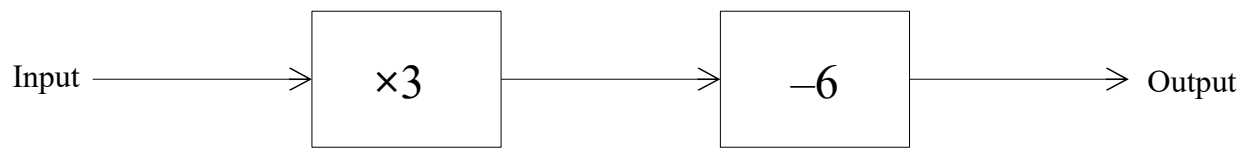
.....  
(1)

.....  
(2)

**(Total for question 7 is 4 marks)**

---

8 Here is a number machine.



(a) What is the **output** when the **input** is 4?

.....  
(1)

(b) What is the **input** when the **output** is 15?

.....  
(1)

(c) Show that there is a value of the input for which the input and the output have the same value.

(2)

---

(Total for question 8 is 4 marks)

- 9 A rule to change from temperature measured in degrees Celsius ( $^{\circ}\text{C}$ ) to degrees Fahrenheit ( $^{\circ}\text{F}$ ) is

Multiply the temperature in degrees Celsius by 1.8 then add 32

The temperature in London is  $12^{\circ}\text{C}$ .

- (a) Work out the temperature, in London, in Fahrenheit ( $^{\circ}\text{F}$ )

.....  
(2)

The temperature in New York is  $54^{\circ}\text{F}$

- (b) Work out the temperature, in New York, in Celsius ( $^{\circ}\text{C}$ )

.....  
(2)

**(Total for question 9 is 4 marks)**

- 10 A rule to calculate a taxi fare is

£2.50 plus £2.20 per mile

- (a) Work how much a 10 mile taxi journey would cost.

.....  
(1)

A taxi journey costs £20.10

- (b) Work out distance of the journey.

.....  
(2)

**(Total for question 10 is 3 marks)**