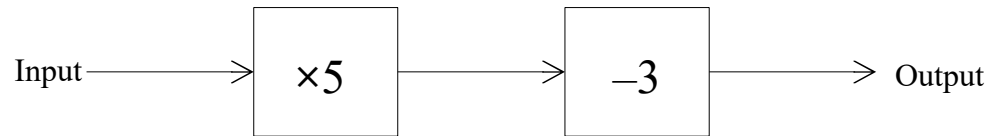
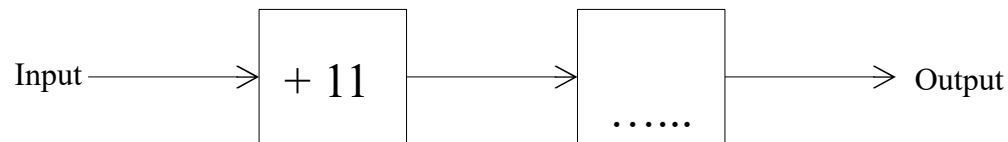


1 Here is a number machine.



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

Here is a different number machine.

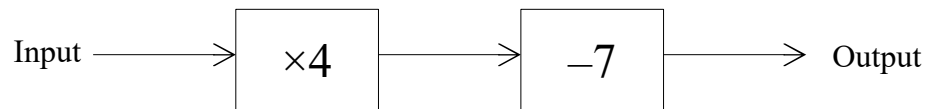


When the input is 9 the output is 2.

(b) Complete the number machine.

(2 marks)

2 Here is a number machine.

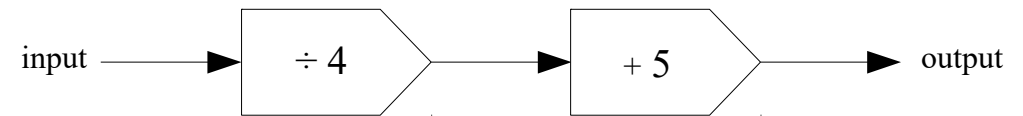


(a) What is the **output** when the **input** is 6?

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

(3 marks)

3 Here is a number machine.

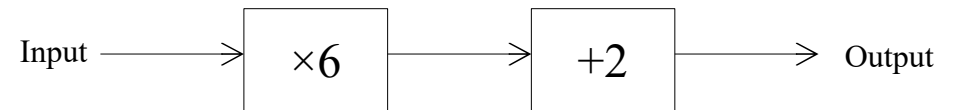


(a) Find the **output** when the **input** is 12

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

(3 marks)

4 Here is a number machine.

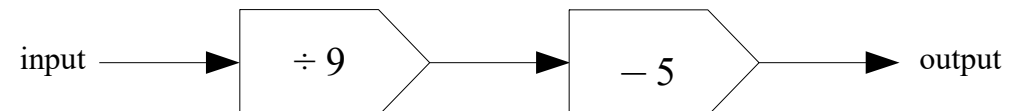


(a) What is the **output** when the **input** is 3?

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

(3 marks)

5 Here is a number machine.

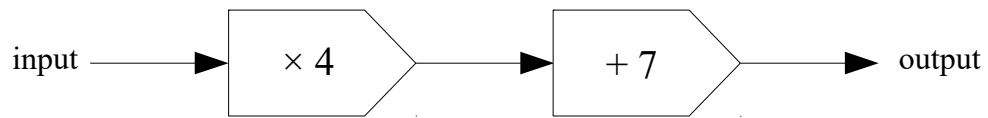


(a) Find the **output** when the **input** is 81

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

(3 marks)

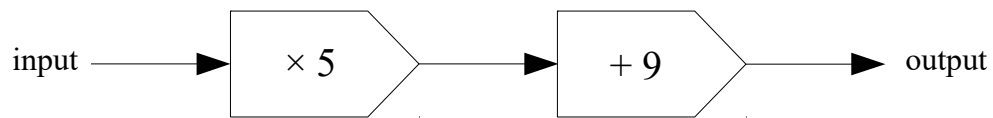
6 Here is a number machine.



- (a) Find the output when the input is 5
 (b) Find the output when the input is -3
 (c) Find the input when the output is 71

(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
 (c) Find the input when the output is 64

(4 marks)

8 Here is a number machine.



- (a) What is the **output** when the **input** is 4?
 (b) What is the **input** when the **output** is 15?
 (c) Show that there is a value of the input for which the input and the output have the same value.

(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°C .

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

The temperature in New York is 54°F

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

(4 marks)

10 A rule to calculate a taxi fare is

$\pounds 2.50$ plus $\pounds 2.20$ per mile

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

A taxi journey costs $\pounds 20.10$

(b) Work out distance of the journey.

(3 marks)