Corbett maths

Function Machines
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Examples

Workout

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Question 1:   Here is a function machine

input ⟶ [Add 9] ⟶ output

(a) Work out the output when the input is 12
(b) Work out the output when the input is 35

(c) Work out the input when the output is 14
(d) Work out the input when the output is 10.5
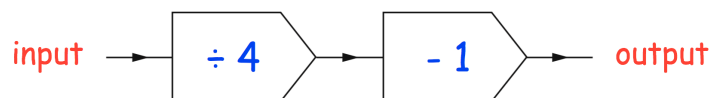
Question 2:   Here is a function machine

input ⟶ [Divide by 4] ⟶ output
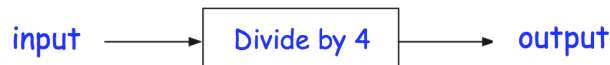
(a) Work out the output when the input is 40
(b) Work out the output when the input is 22

(c) Work out the input when the output is 7
(d) Work out the input when the output is 9.5

Question 3:   Here is a function machine
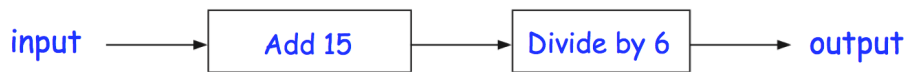
input ⟶ [Multiply by 3] ⟶ [Subtract 7] ⟶ output

(a) Work out the output when the input is 8
(b) Work out the output when the input is 2

(c) Work out the input when the output is 26
(d) Work out the input when the output is −4
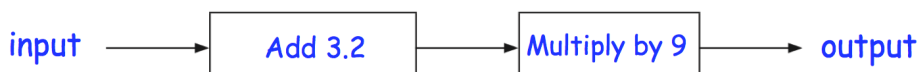
Question 4:   Here is a function machine

input ⟶ [÷ 4] ⟶ [- 1] ⟶ output

(a) Work out the output when the input is 24
(b) Work out the output when the input is 42

(c) Work out the input when the output is 17
(d) Work out the input when the output is 4.5

Question 5: Here is a function machine

input $\longrightarrow$ | Add 15 | $\longrightarrow$ | Divide by 6 | $\longrightarrow$ output

(a) Work out the output when the input is 27
(b) Work out the output when the input is −6

(c) Work out the input when the output is 9
(d) Work out the input when the output is 0

Question 6: Here is a function machine

input $\longrightarrow$ | Add 3.2 | $\longrightarrow$ | Multiply by 9 | $\longrightarrow$ output

(a) Work out the output when the input is 1
(b) Work out the output when the input is 4.5

(c) Work out the input when the output is 180
(d) Work out the input when the output is 38.7

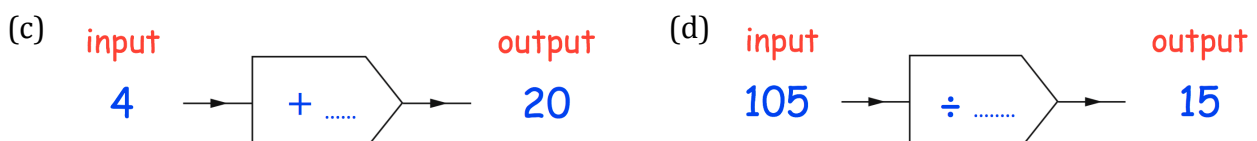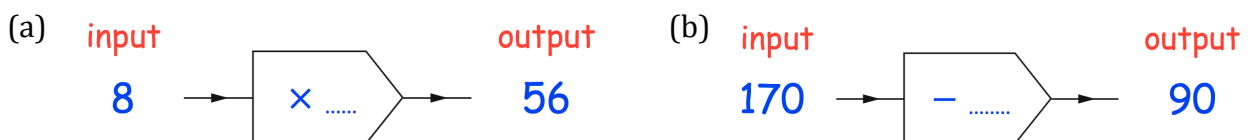**Question 7:** Here is a function machine

input $\longrightarrow$ | Divide by 5 | $\longrightarrow$ | Add 3 | $\longrightarrow$ | Multiply by 4 | $\longrightarrow$ output

(a) Work out the output when the input is 75
(b) Work out the output when the input is 4000

(c) Work out the input when the output is 0
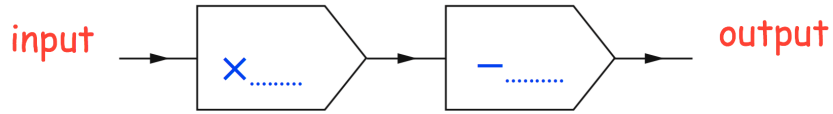(d) Work out the input when the output is 60

Apply

Question 1: Complete the following function machine so that the inputs gives the correct outputs.

(a)
input
8 $\longrightarrow$ | × ...... | $\longrightarrow$ output
56

(b)
input
170 $\longrightarrow$ | − .... | $\longrightarrow$ output
90

(c)
input
4 $\longrightarrow$ | + ... | $\longrightarrow$ output
20

(d)
input
105 $\longrightarrow$ | ÷ .... | $\longrightarrow$ output
15

Question 2:

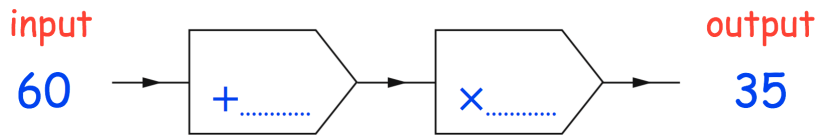input → ×........ → −........ → output

If the input is 3, the output is 13.
If the input is 8, the output is 38.

Use this information to fill in the two boxes.

Question 3: Here is a function machine.

input
60 → +........... → ×........... → output
35

Complete the following function machine so that the input gives the correct output.

Question 4: This function machine multiplies a number by 3 and then subtracts 12.

input → Multiply by 3 → Subtract 12 → output
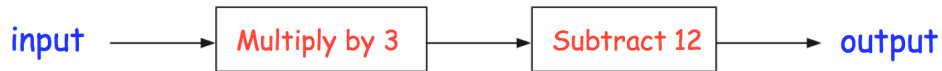
The input is the same as the output.
Find the input.

**Question 5:** This function machine multiplies a number by 6 and then subtracts 80.

input → Multiply by 6 → Subtract 80 → output
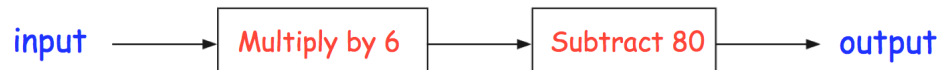
The input is the same as the output.
Find the input.

Question 6: Here is a function machine.
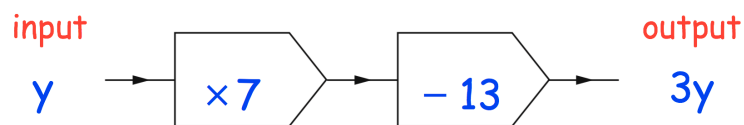
input → Multiply by 4 → add 18 → output

Lucas says that it is not possible to have the same value for the input and output.
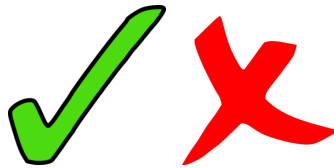Show Lucas is wrong.

Question 7: Here is a function machine.

input ⟶ Multiply by 4 ⟶ add 10 ⟶ output
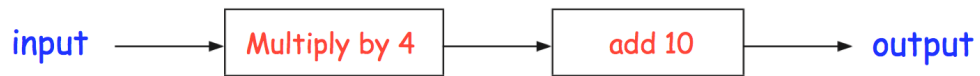
The output is twice the input.
Find the input.

Question 8: Here is a function machine.
The input is y and the output is 3y

input
y ⟶ ×7 ⟶ − 13 ⟶ output
3y

Find the value of the output

Answers

✓ ✗

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