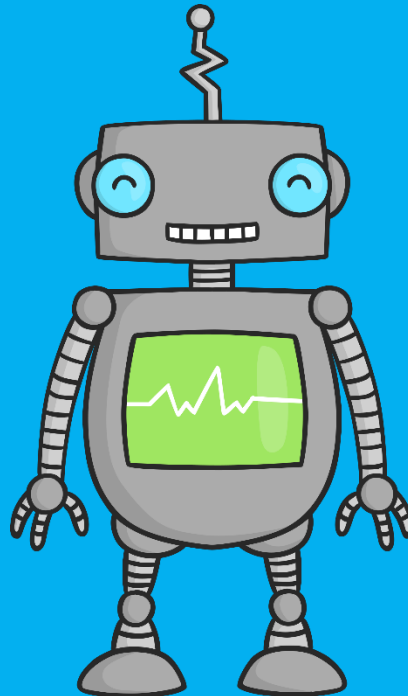
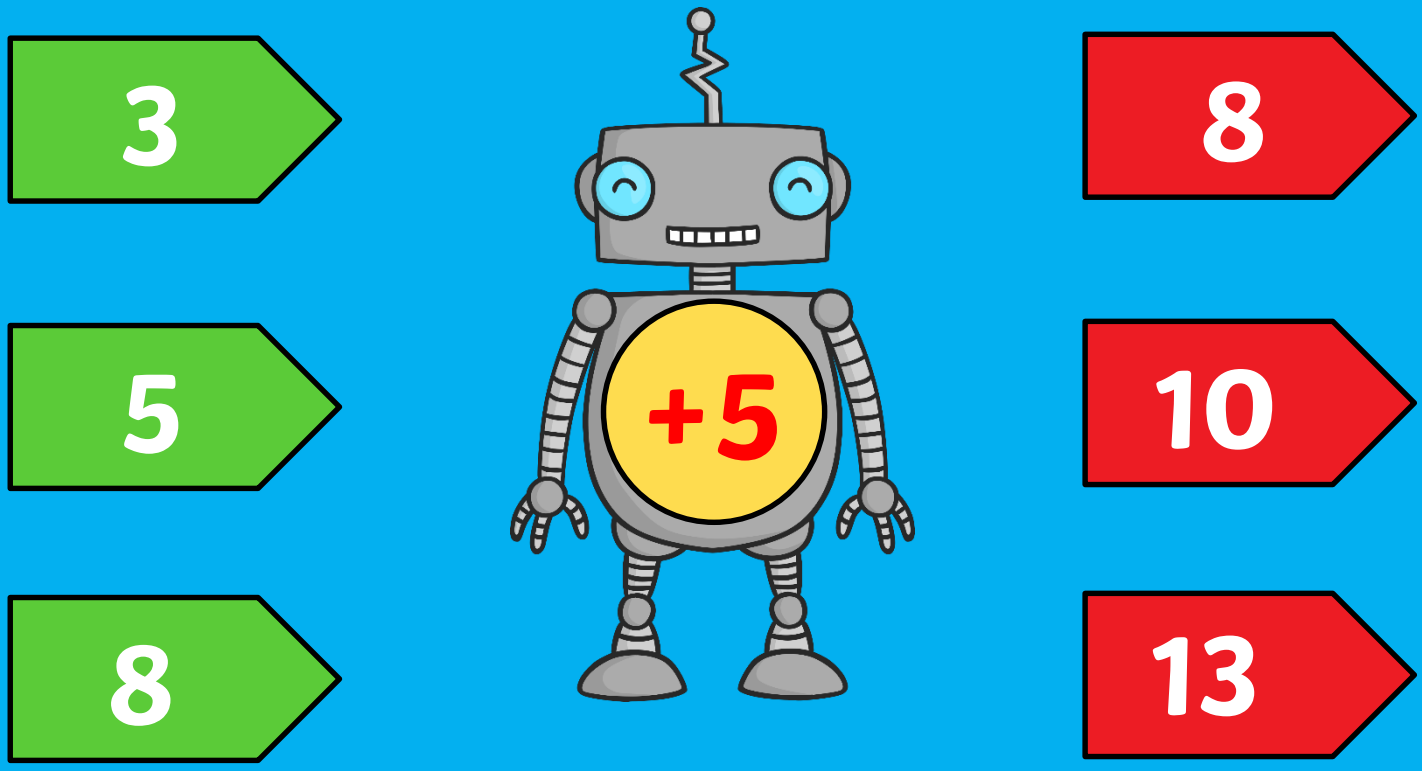
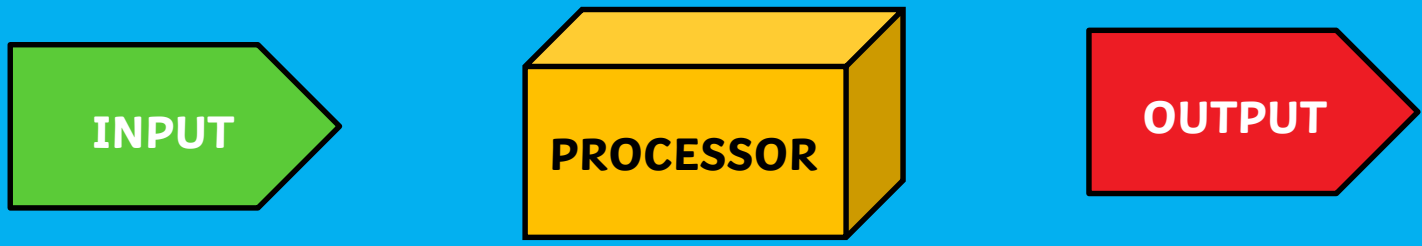


# Introduction to Function Machines



# Rules and Robots

Imagine that we have a robot to help us make patterns...



INPUT

PROCESSOR

OUTPUT

16

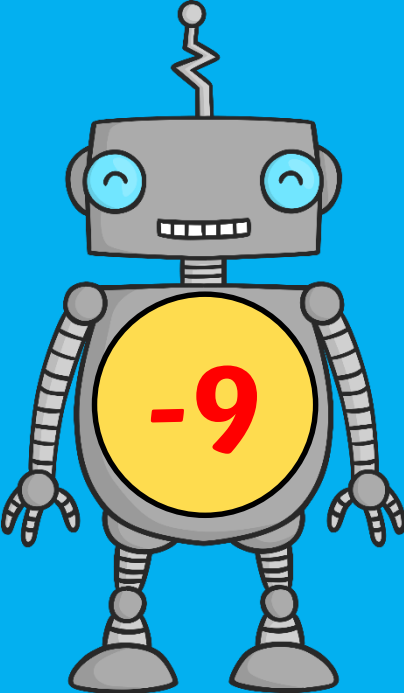
7

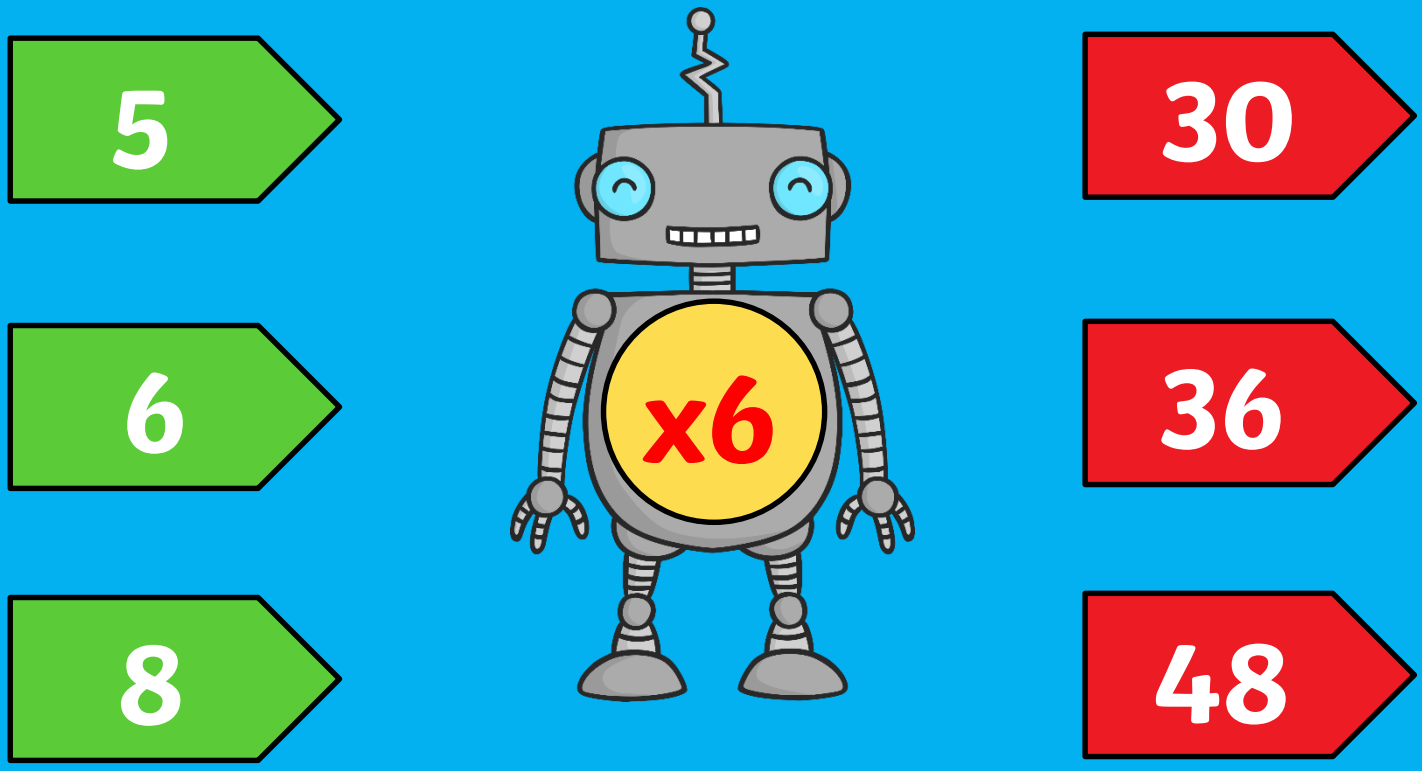
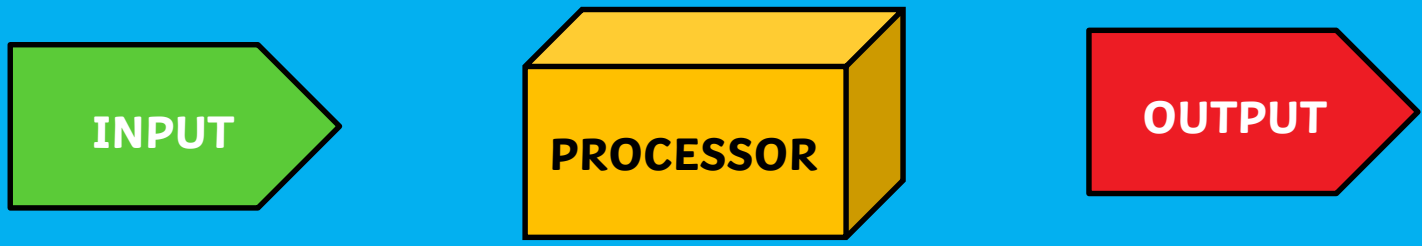
29

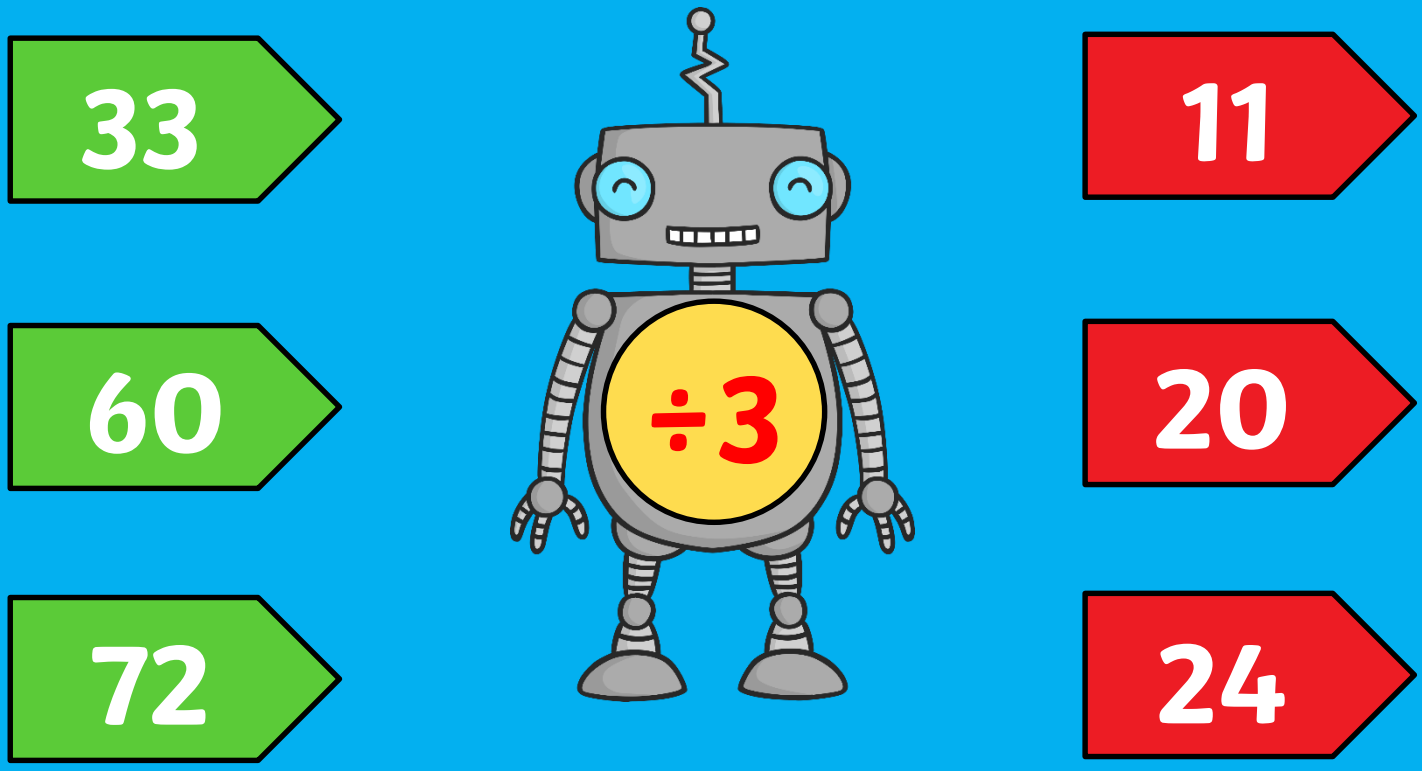
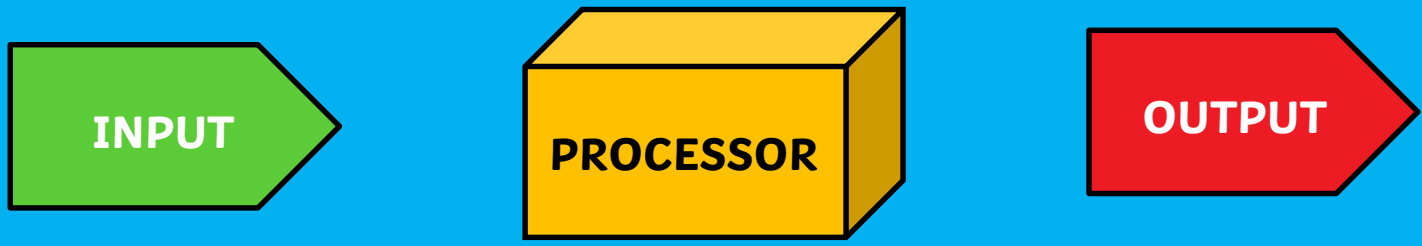
20

36

27







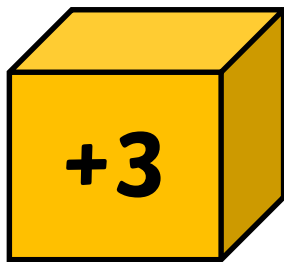


## Your Turn!

Here are some more single machines.  
What is the output of each machine?

**A**

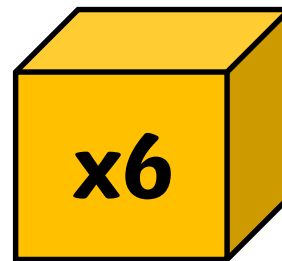
2  
4  
8



5  
7  
11

**D**

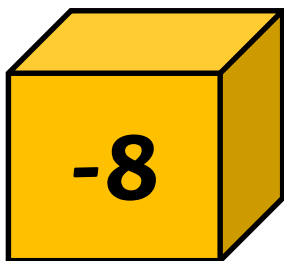
3  
5  
8



18  
30  
48

**B**

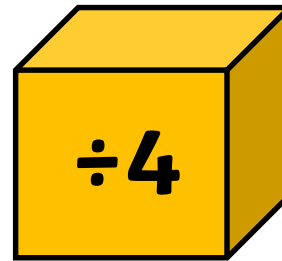
15  
18  
40



7  
10  
32

**E**

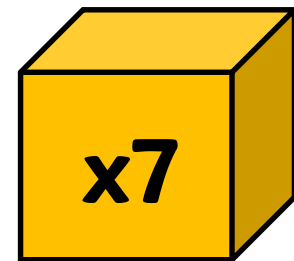
16  
40  
36



4  
10  
9

**C**

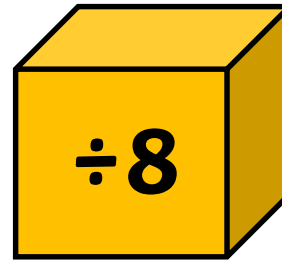
4  
5  
9



28  
35  
63

**F**

64  
56  
88



8  
7  
11

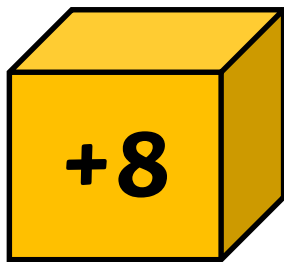


**G**

2

4

8



10

12

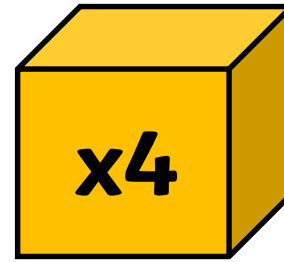
16

**H**

4

5

6



16

20

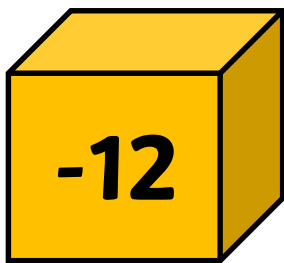
24

**I**

17

48

53



5

36

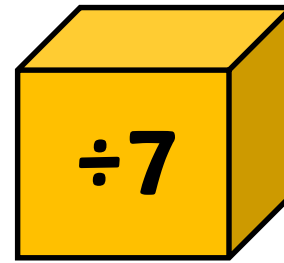
41

**J**

42

77

56



6

11

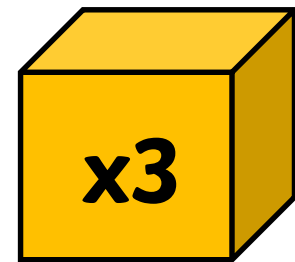
8

**K**

6

7

8



18

21

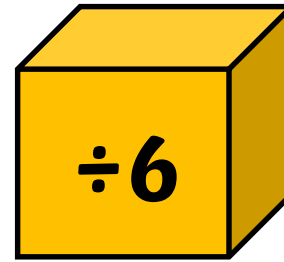
24

**L**

36

42

48



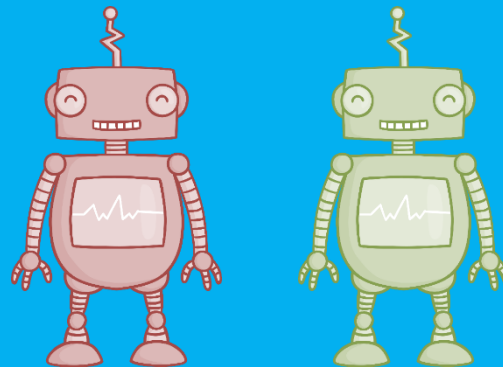
6

7

8

# Double Vision

Imagine that we have two robots to help us make patterns...



The output of machine 1 is input to machine 2.

4

8

9

6

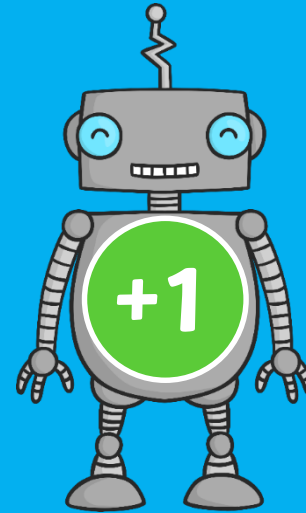
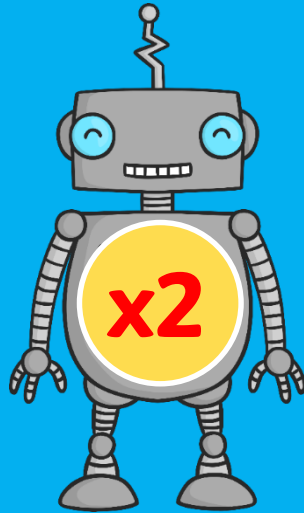
12

13

3

6

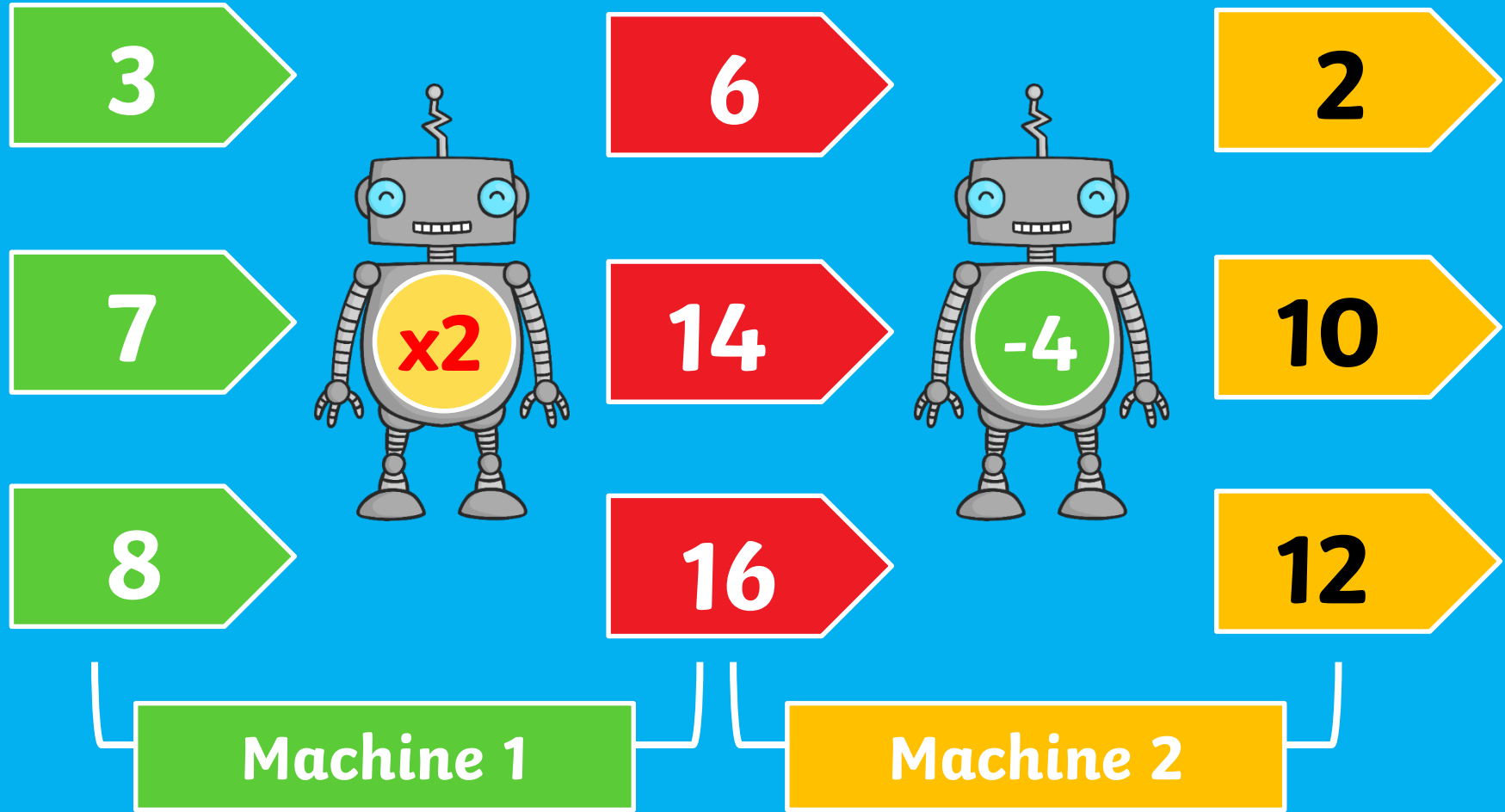
7



Machine 1

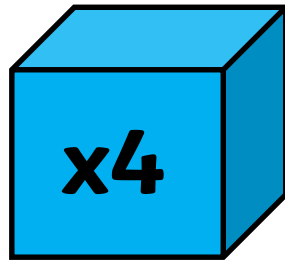
Machine 2

The output of machine 1 is input to machine 2.

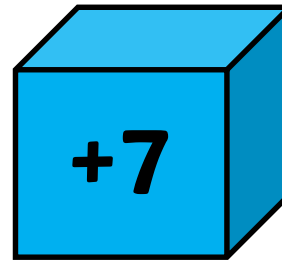


**A**

3  
6  
12



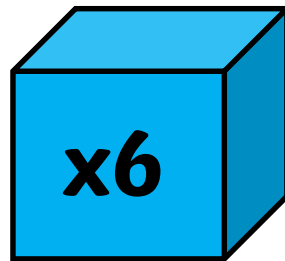
12  
24  
48



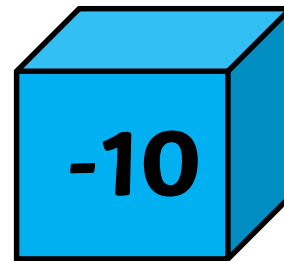
19  
31  
55

**B**

4  
9  
11



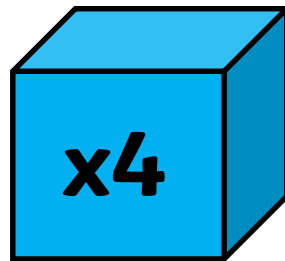
24  
54  
66



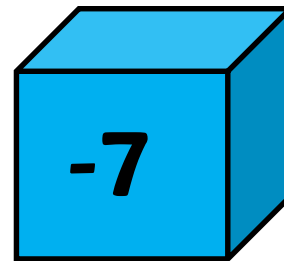
14  
44  
56

**C**

2  
7  
6



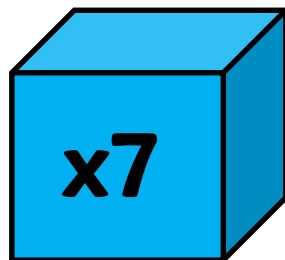
8  
28  
24



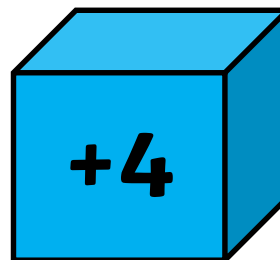
1  
21  
17

**D**

4  
7  
3



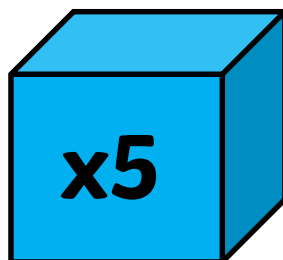
28  
49  
21



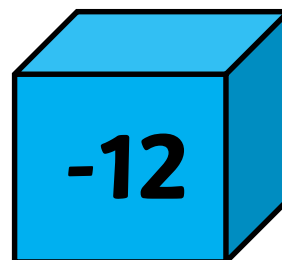
32  
53  
25

**E**

8  
12  
11



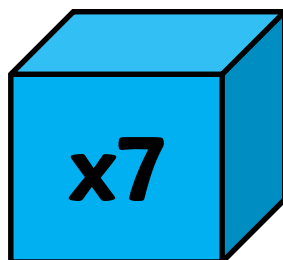
40  
60  
55



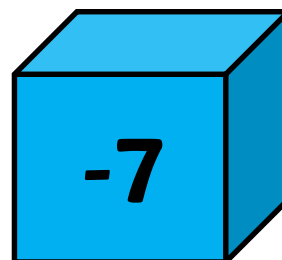
28  
48  
43

**F**

3  
6  
7



21  
42  
49



14  
35  
42