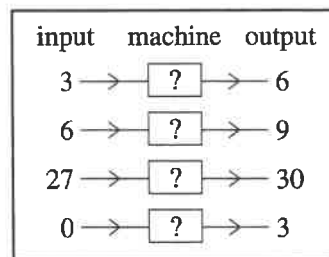


Mystery machines

The following inputs go into a mystery machine ...

3, 6, 27 and 0.

The diagram shows the outputs produced ...



The 'mystery' machine has added three to produce the outputs because it links *all* the inputs to the outputs in the same way.

The mystery machine was ... input \rightarrow $+3$ \rightarrow output

Exercise 5

What operation is taking place in each of these machines?

1.

input	output
1 → [?] →	5
2 → [?] →	10
3 → [?] →	15

2.

input	output
63 → [?] →	7
54 → [?] →	6
27 → [?] →	3

3.

input	output
10 → [?] →	8
9 → [?] →	7
8 → [?] →	6

4.

input	output
3 → [?] →	6
8 → [?] →	11
7 → [?] →	10

5.

input	output
12 → [?] →	6
2 → [?] →	1
50 → [?] →	25

6.

input	output
19 → [?] →	57
9 → [?] →	27
7 → [?] →	21

7.

input	output
2 → [?] →	20
5 → [?] →	50
8 → [?] →	80

8.

input	output
9 → [?] →	63
4 → [?] →	28
8 → [?] →	56

9.

input	output
8 → [?] →	64
1 → [?] →	8
3 → [?] →	24

For Questions 10 to 15 copy and complete the number machines after working out the operation for each.

10.

input	output
1 → [] →	7
7 → [] →	13
13 → [] →	?
? → [] →	26

11.

input	output
2 → [] →	8
3 → [] →	12
4 → [] →	?
10 → [] →	?

12.

input	output
12 → [] →	5
7 → [] →	0
18 → [] →	?
? → [] →	13

13.

input	output
0 → [] →	11
3 → [] →	?
12 → [] →	23
? → [] →	31

14.

input	output
3 → [] →	1
9 → [] →	3
? → [] →	4
15 → [] →	?

15.

input	output
0 → [] →	?
5 → [] →	50
? → [] →	40
7 → [] →	70