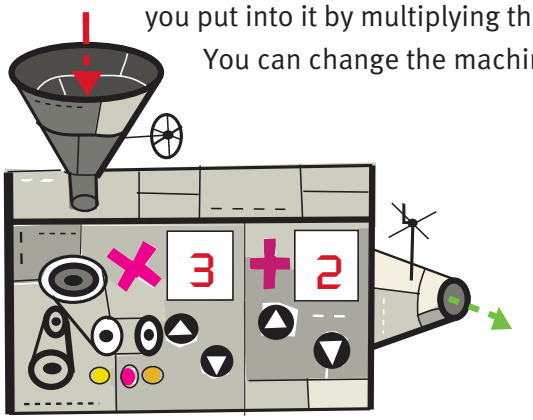
Number Crunching

ACTIVITY

Michael's teacher, Mr Wall, has a number-crunching machine. It changes the numbers that you put into it by multiplying them by one number and then adding another. You can change the machine numbers by pressing the up and down arrows.



This table shows what this machine does to the input numbers 4, 5, 7, and 0 if the machine is set at x 3 and + 2 :

Input	Output
4	14
5	17
7	23
0	2

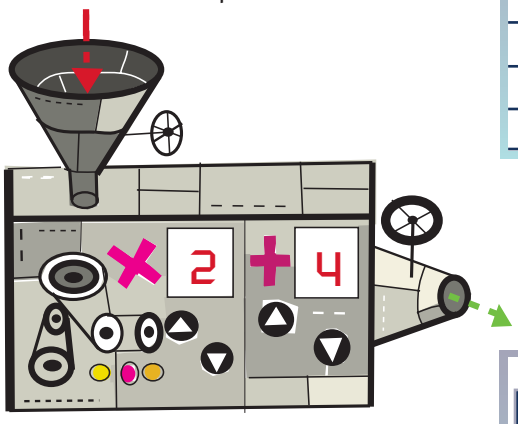
1. Mr Wall sets the machine at x 6 and + 3. Complete the table.

Input	Output
3	
4	
6	
0	
7	

2. He then sets the machine at x 4 and + −2. Complete the table.

Input	Output
4	
5	
9	
0	
8	

3. For the third try, Mr Wall sets the machine like this:



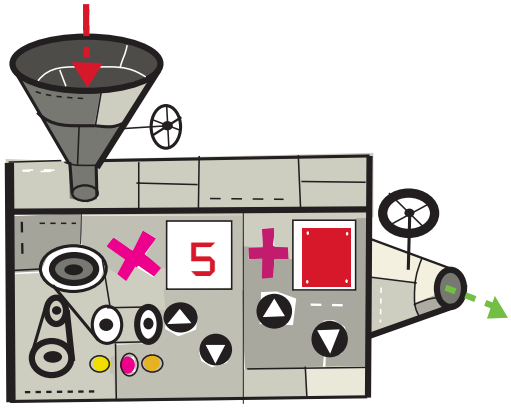
Copy and complete the table that he puts on the board.

Input	Output
2	8
	12
	4
	10
	24

4. Mr Wall then makes it really tricky. He says, "I'll give you the completed table, and you have to guess the missing number on the machine."

a. He covers the [+] number first.

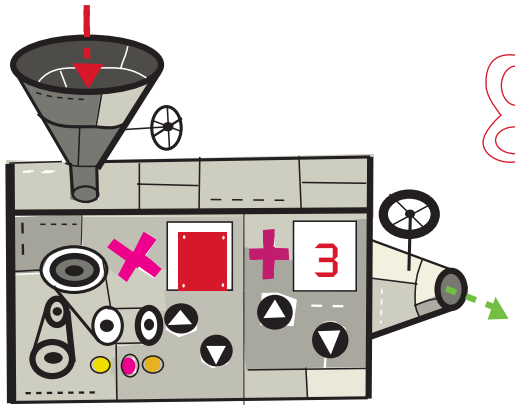
Input	Output
3	19
5	29
6	34
2	14
0	4



What number did he cover up?

b. Mr Wall sets the machine again and covers the [x] number.
He gives the students this table:

Input	Output
4	15
3	12
1	6
0	3
7	24

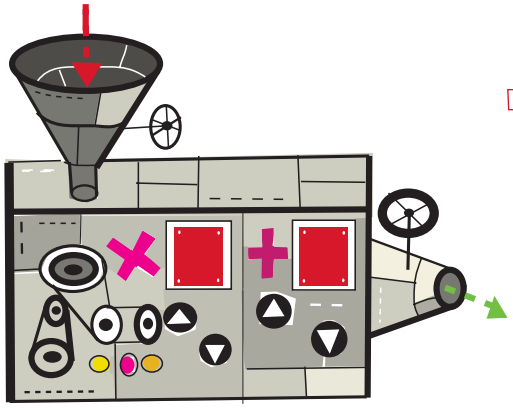


What number did he cover up?

5. Mr Wall changes the machine settings again, but this time, he covers both numbers.

a. He gives the students this table:

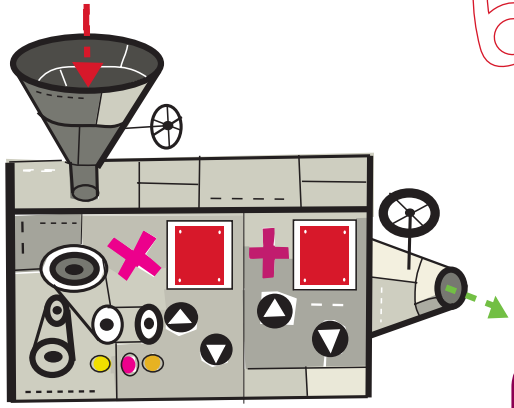
Input	Output
4	17
2	9
5	21
3	13
0	1
1	5



What numbers did he cover up?

b. Mr Wall changes the machine settings and covers both numbers again.
"This time, the [x] number is a negative number," he warns.

Input	Output
3	−3
2	−1
4	−5
0	3
1	1



What numbers did he cover up?