1) What might the rule be for this function machine?

$50 \longrightarrow \boxed{?} \longrightarrow 100$

+ 50 or x 2
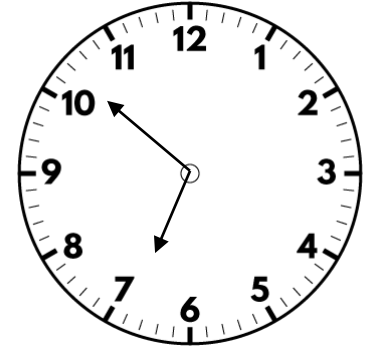
2) What is 10% of 300?   **30**

3) Divide 26 by 100   **0.26**

4) How many m are there in $5\frac{1}{2}$ km?   **5,500 m**

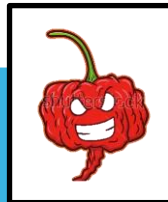White Rose Maths

RECALL

Write your 45 times table up to 45 x 15.

What is the 3rd number in the sequence?

What is the 12th number in the sequence?

What would the 20th number in the sequence?
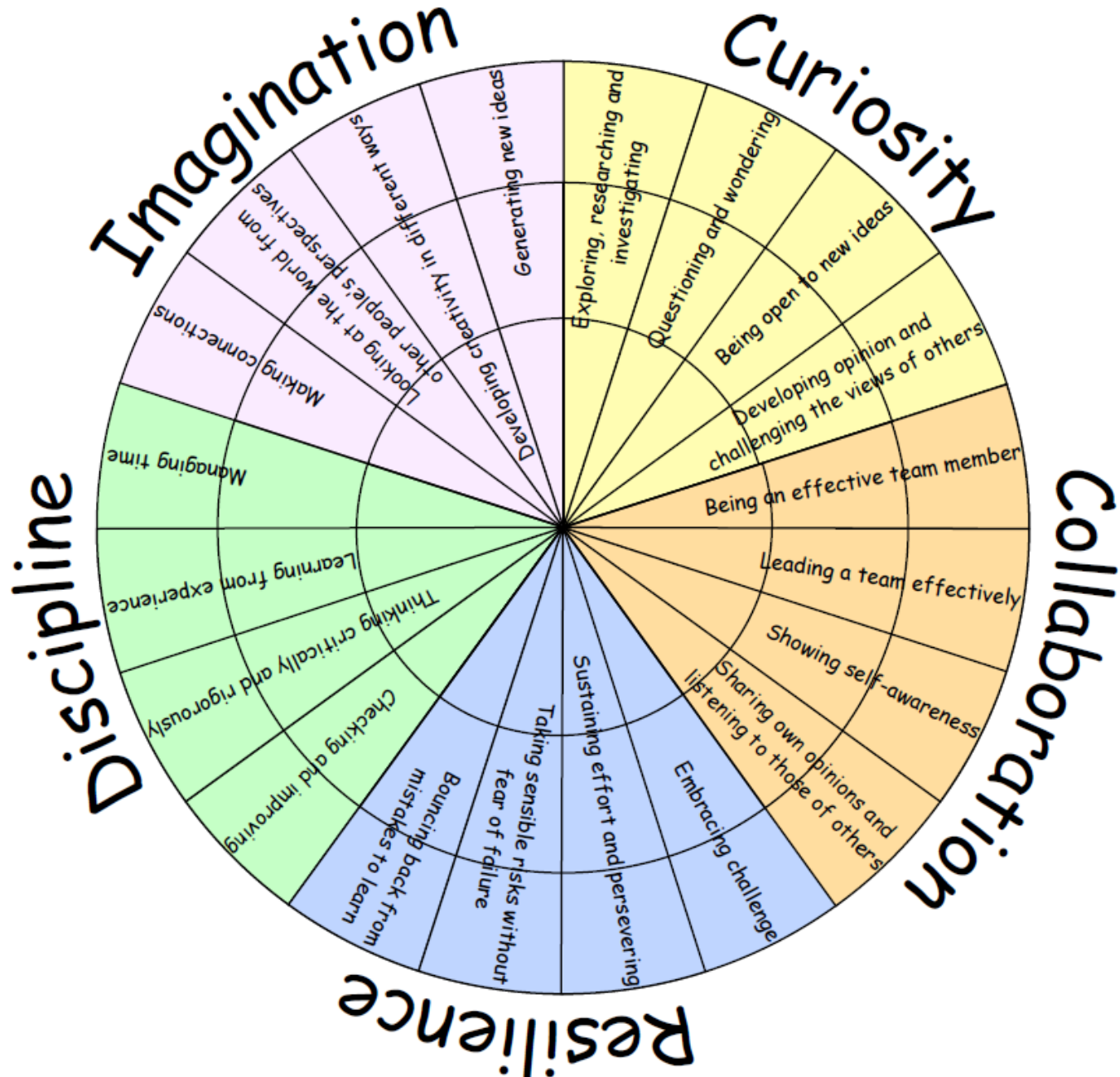
What would the 100th number in the sequence?

How could I work out any number in the sequence?

I CAN MAKE GENERALISATIONS ABOUT SINGLE STEP NUMBER PATTERNS AND EXPRESS THEM ALGEBRAICALLY

PROPERTIES OF NUMBER (21IV)

LEARNING HABITS?

GUIDED PRACTICE

1) Jen is 26 years older than Lexi.

Can you show how old Jen will be when Lexi is various ages?

2) Mr Jones is 47 years older than Ebo.

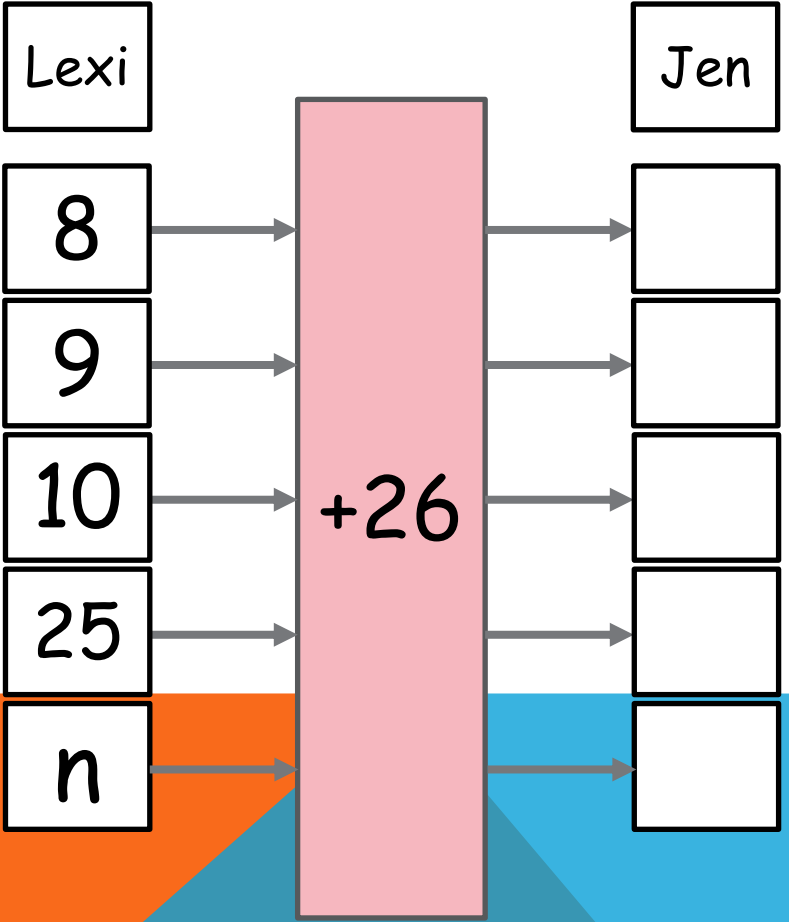Can you show Ebo's age when Mr Jones is different ages?
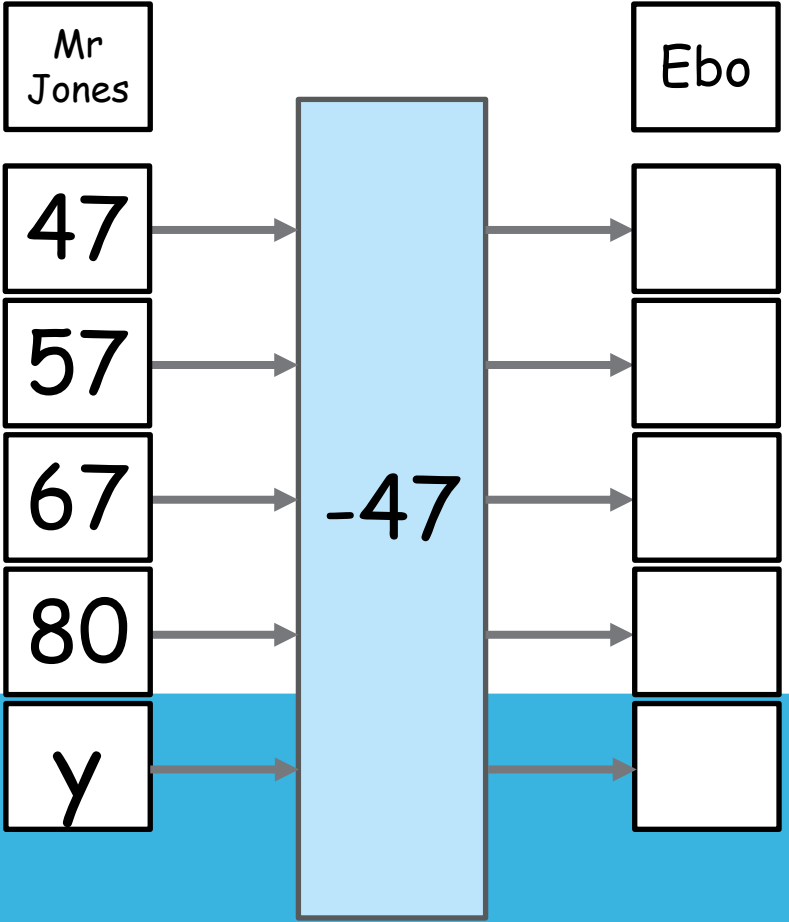
Draw a table!

If Lexi is n years old, how old is Jen?

If Mr Jones is y years old, how old is Ebo?

GUIDED PRACTICE

Function machine:

Lexi		Jen
8		
9	+26	
10		
25		
n		

Function machine:

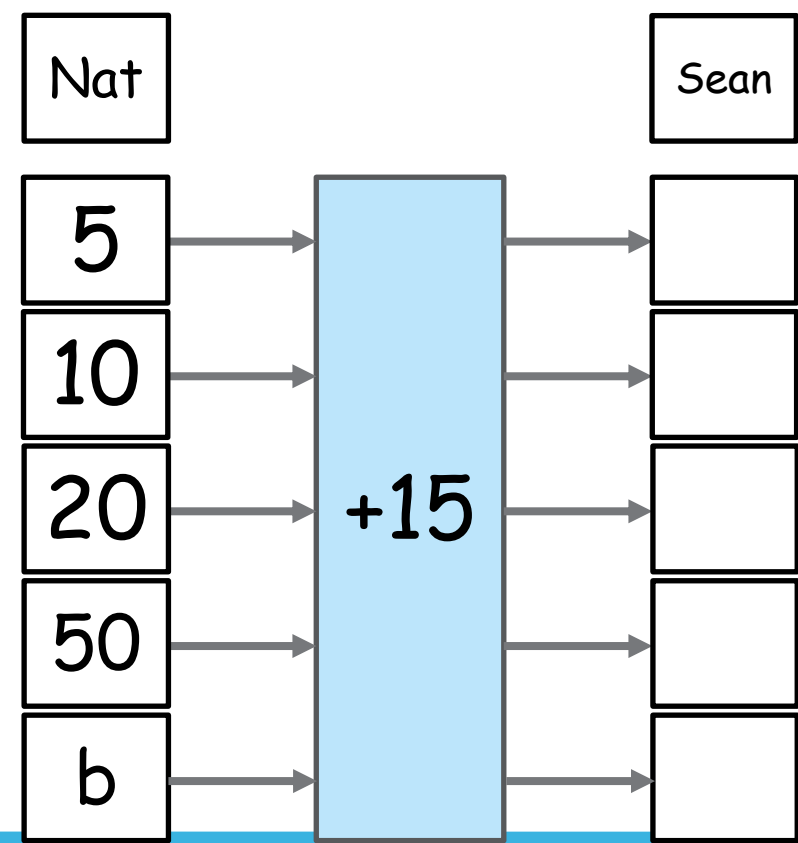| Mr Jones		Ebo
47		
57	-47	
67		
80		
y		

INTELLIGENT PRACTICE 🌶

Complete the following function machine and table:

Sean started running before Nat.

Complete the function machine to show how long Sean was running for.

Function machine:

Nat		Sean
5	+15	
10		
20		
50		
b		

Nat	1		72	85		150	x
Sean		20			115		

INTELLIGENT PRACTICE 🌶️🌶️
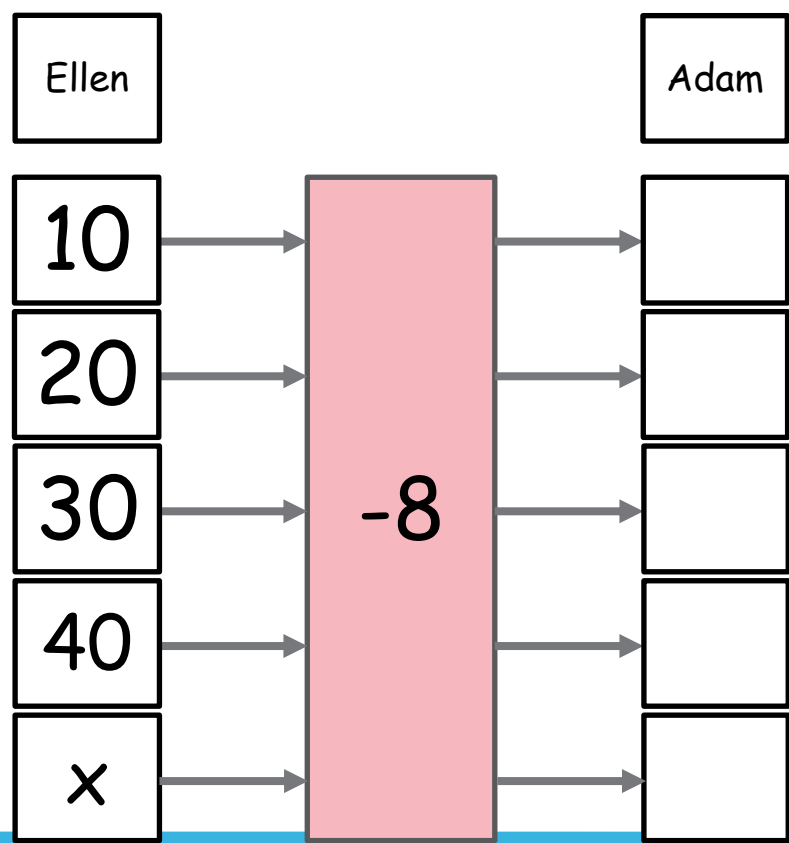
Complete the following function machine and table:

Adam and Ellen were driving to Silverstone.

Adam was constantly 8 miles behind Ellen.

Show this in the function machine and then complete the table.

Function machine:

Ellen		Adam
10		
20	-8	
30		
40		
x		

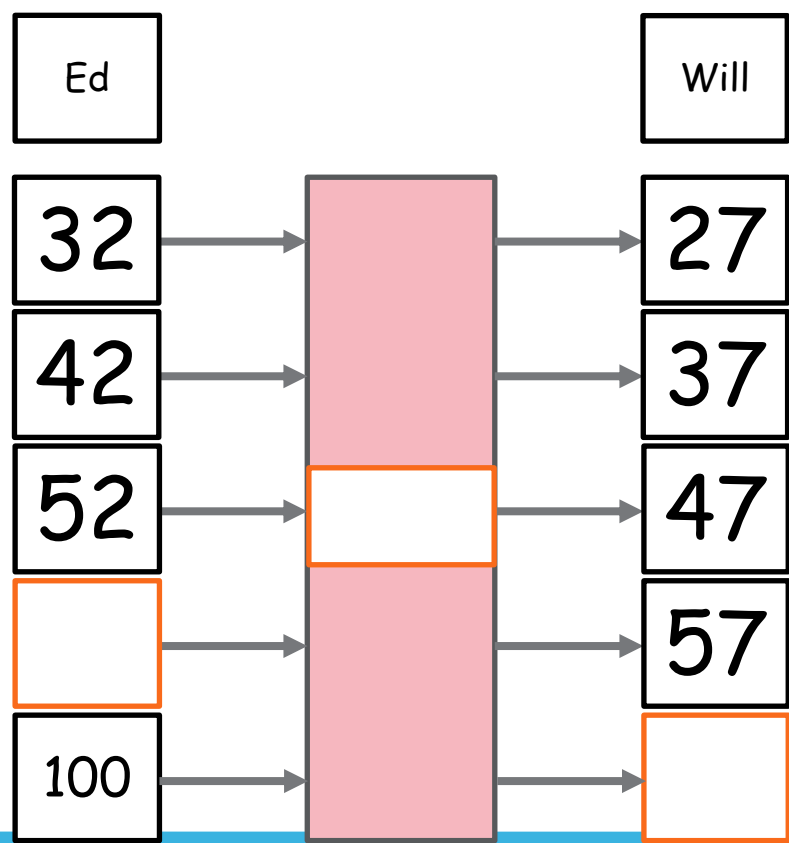| Ellen	15		40	65		100	x
Adam		20			70		

INTELLIGENT PRACTICE 🌶️🌶️🌶️

Look at the numbers in the function machine.

What is the rule that connects the two sets of numbers?

Complete the missing boxes in both the function machine and in the table below.

Ed		Will
32	→	27
42	→	37
52	→	47
	→	57
100	→	

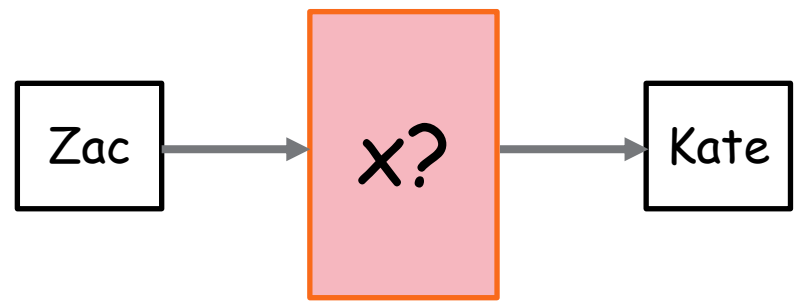| Ed	11		21	26		100	x
Will		12			70		

DIVE DEEPER 1

1) Zac started painting 30 minutes before Kate.

a) Copy and complete the table and the sentence:

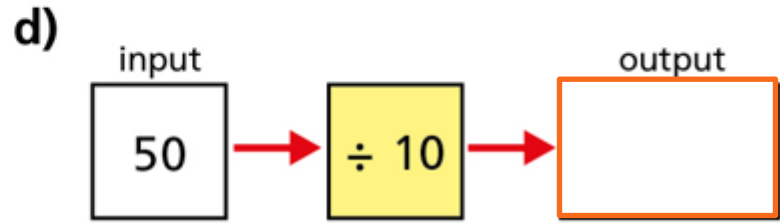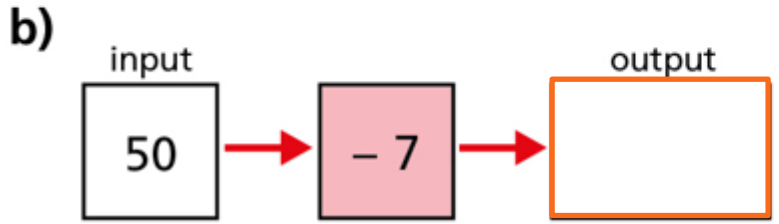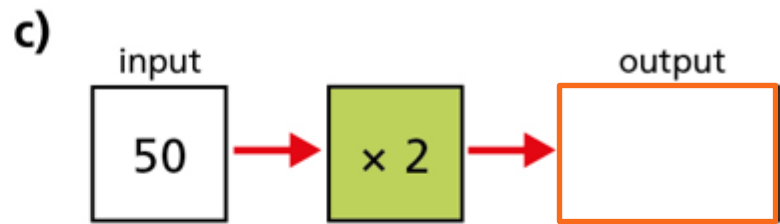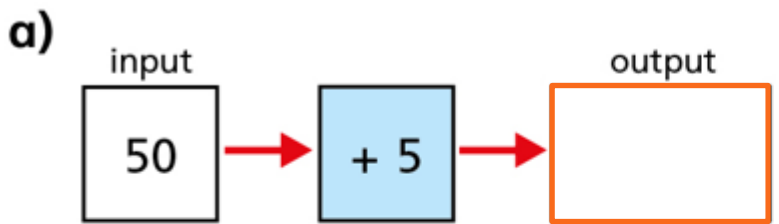| Mins Zac has been painting	Mins Kate has been painting
30	
45	
50	
95	
120	
170	
210	

b) If Zac has been painting for x minutes, Kate has been painting for:

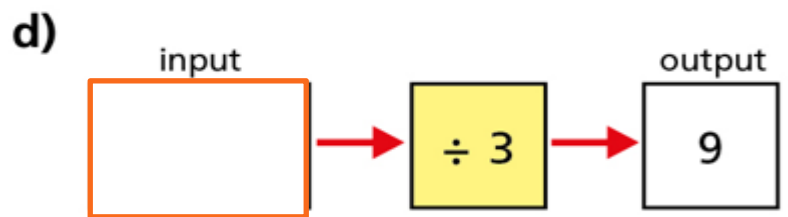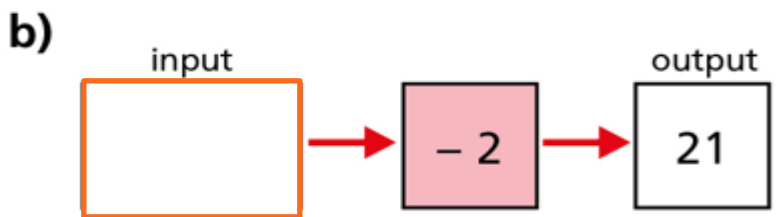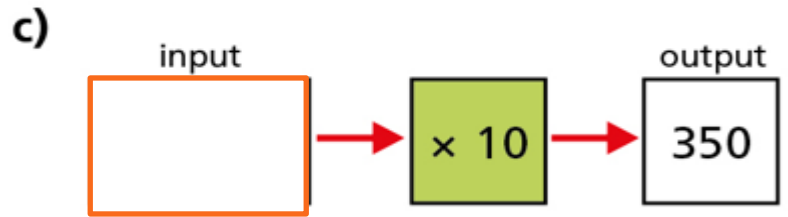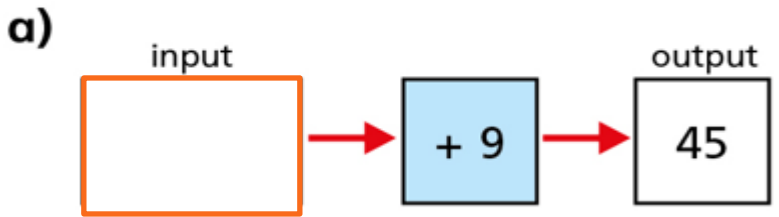c) If Kate has been painting for y minutes, Zac has been painting for:

Zac → x? → Kate

DIVE DEEPER 2

2) Calculate the outputs for the following function machines:

a)

input: 50 → + 5 → output: [ ]

b)

input: 50 → − 7 → output: [ ]

c)

input: 50 → × 2 → output: [ ]

d)

input: 50 → ÷ 10 → output: [ ]

3) Calculate the inputs for the following function machines:

a)

input: [ ] → + 9 → output: 45

b)

input: [ ] → − 2 → output: 21

c)

input: [ ] → × 10 → output: 350
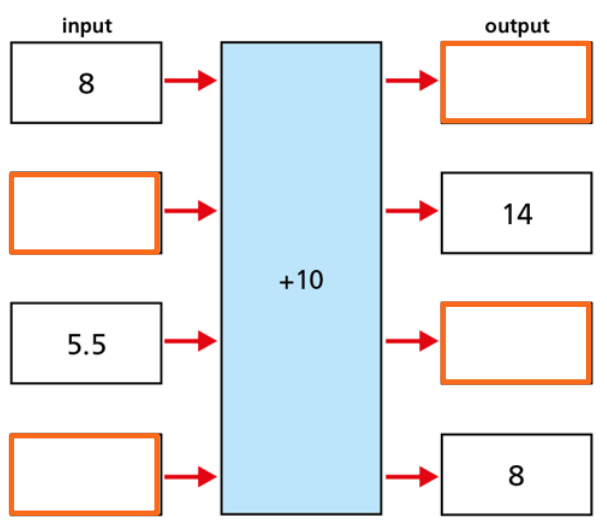
d)

input: [ ] → ÷ 3 → output: 9

DIVE DEEPER 3

4) Write the missing functions into the function machines. You could also add the correct colour if you have noticed which colour represents which operation. ☺

input		output
2	→ □ →	10
5	→ →	25
10	→ →	50

input		output
8	→ □ →	15
0	→ →	7
−3	→ →	4
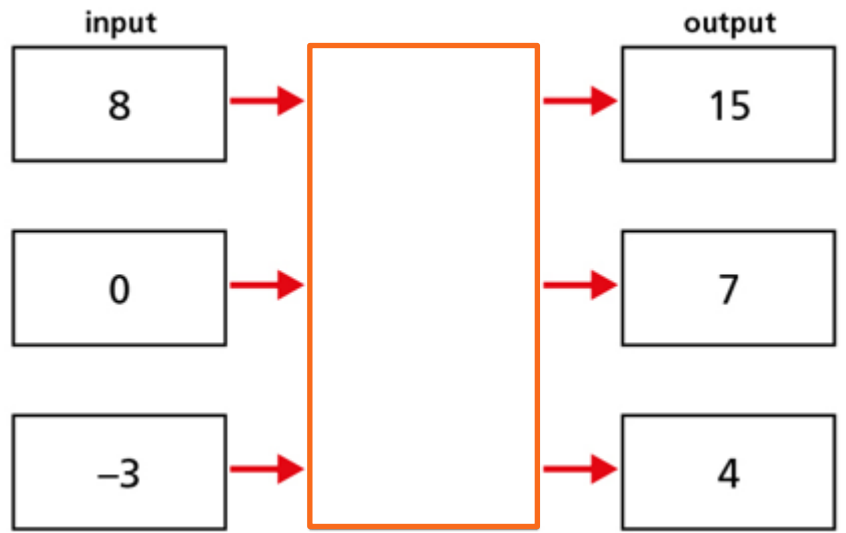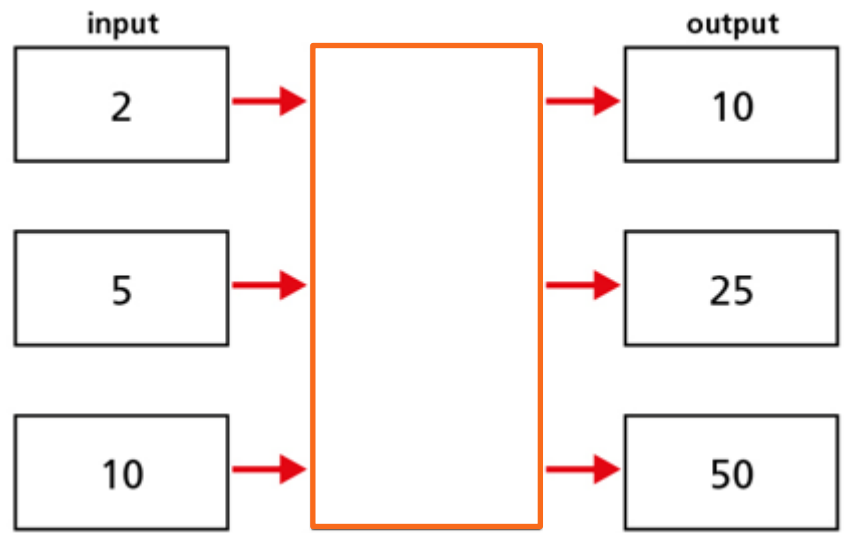
5) Complete the missing numbers:

input		output
8	→ +10 →	□
□	→ →	14
5.5	→ →	□
□	→ →	8

DIVE DEEPER 4

6) Answer the questions about this function machine (add the operation and colour too)

input

| 15 | → | | → | 65 |

output
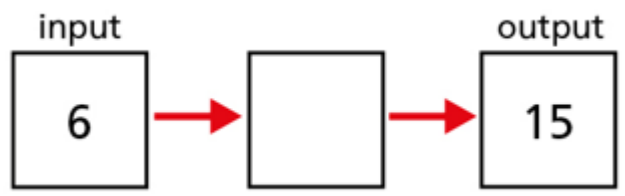
| 20 | → | | → | 70 |

| 50 | → | | → | 100 |
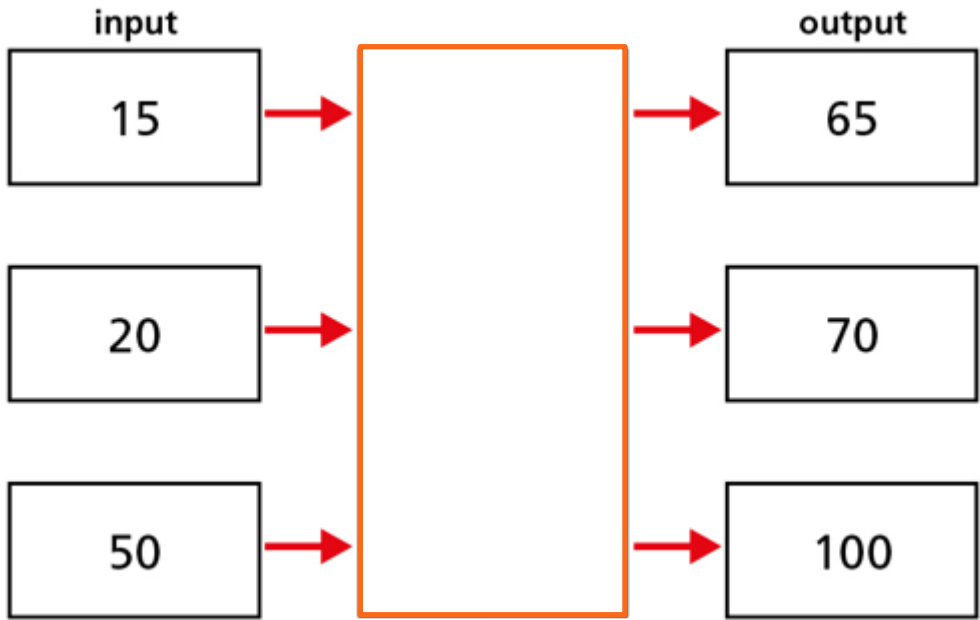
a) If the input is zero, what is the output? [ ]

b) If the output is zero, what is the input? [ ]

7) Dora thinks the rule for this function machine is 'add 9'.
Dexter thinks that it is multiply by 2.5.

Who do you agree with? [ ]

input
| 6 | → | | → | 15 |
output

Why? [ ]

SELF-ASSESSMENT

- Some will even explain function machines with letters

- Some will begin to explain function machines with sentences

- Most will use function machines in both directions

- All will use function machines from input to output