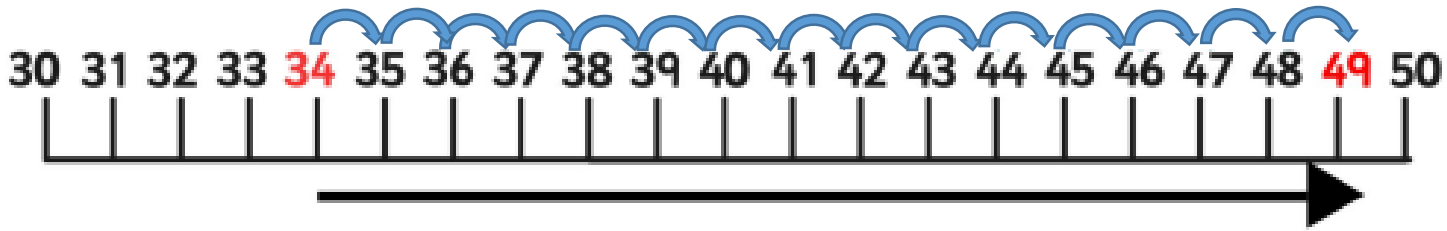
Counting on

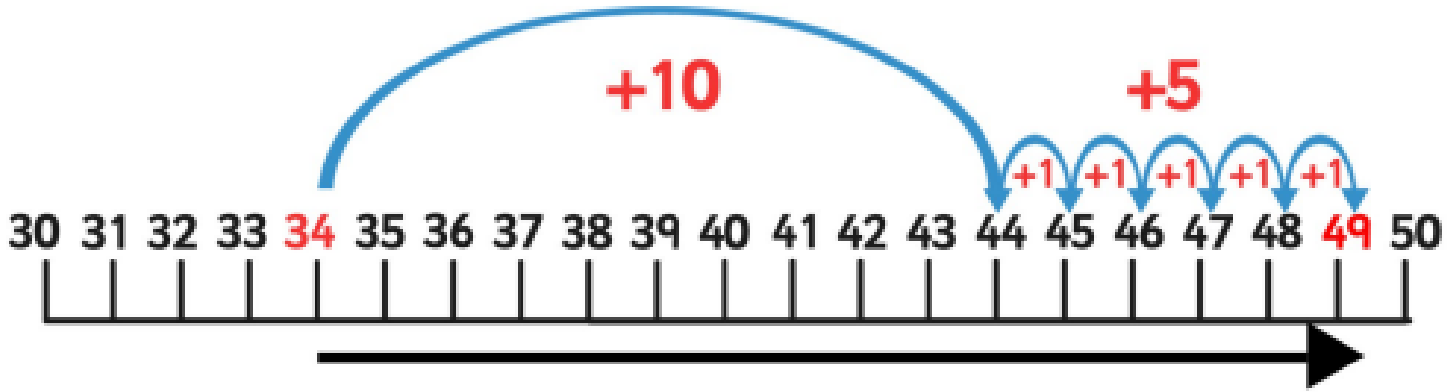
Start on the larger number and count on in ones.

34 + 15 =



This can be developed so the second number is partitioned into smaller numbers to improve fluency.

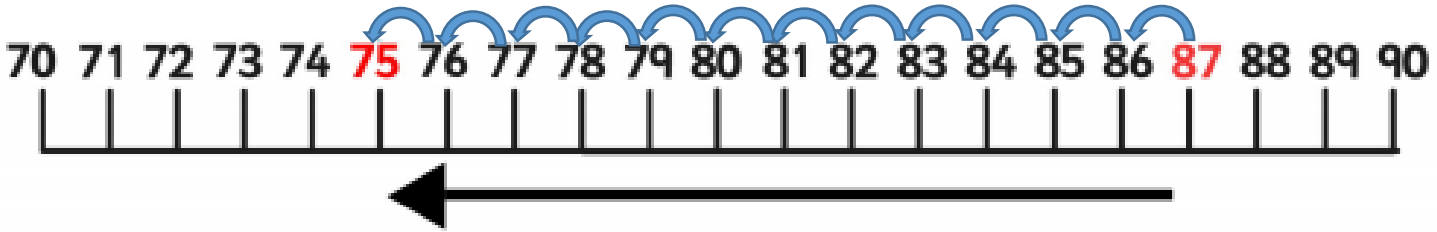
34 + 15 =



Counting back

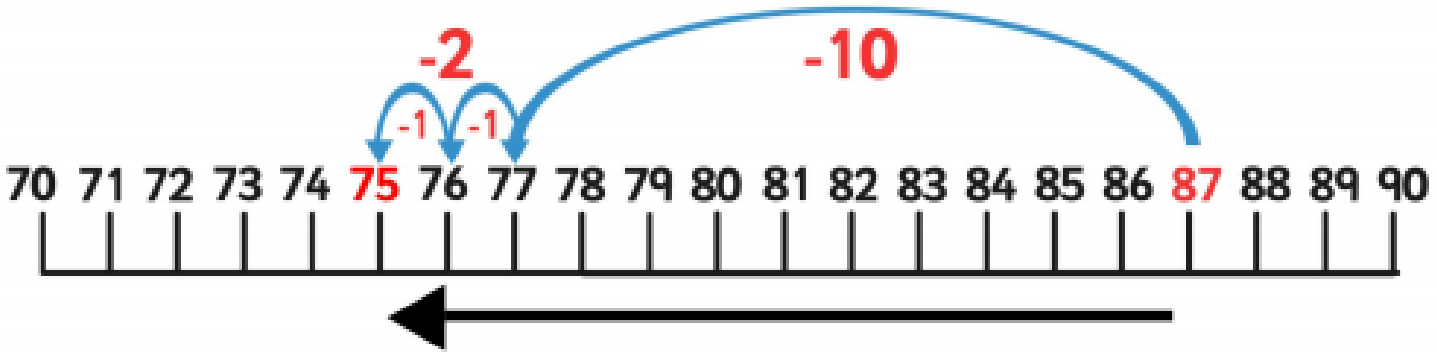
Start on the larger number and count back in ones.

87 – 12 =



This can be developed so the second number is partitioned into smaller numbers to improve fluency.

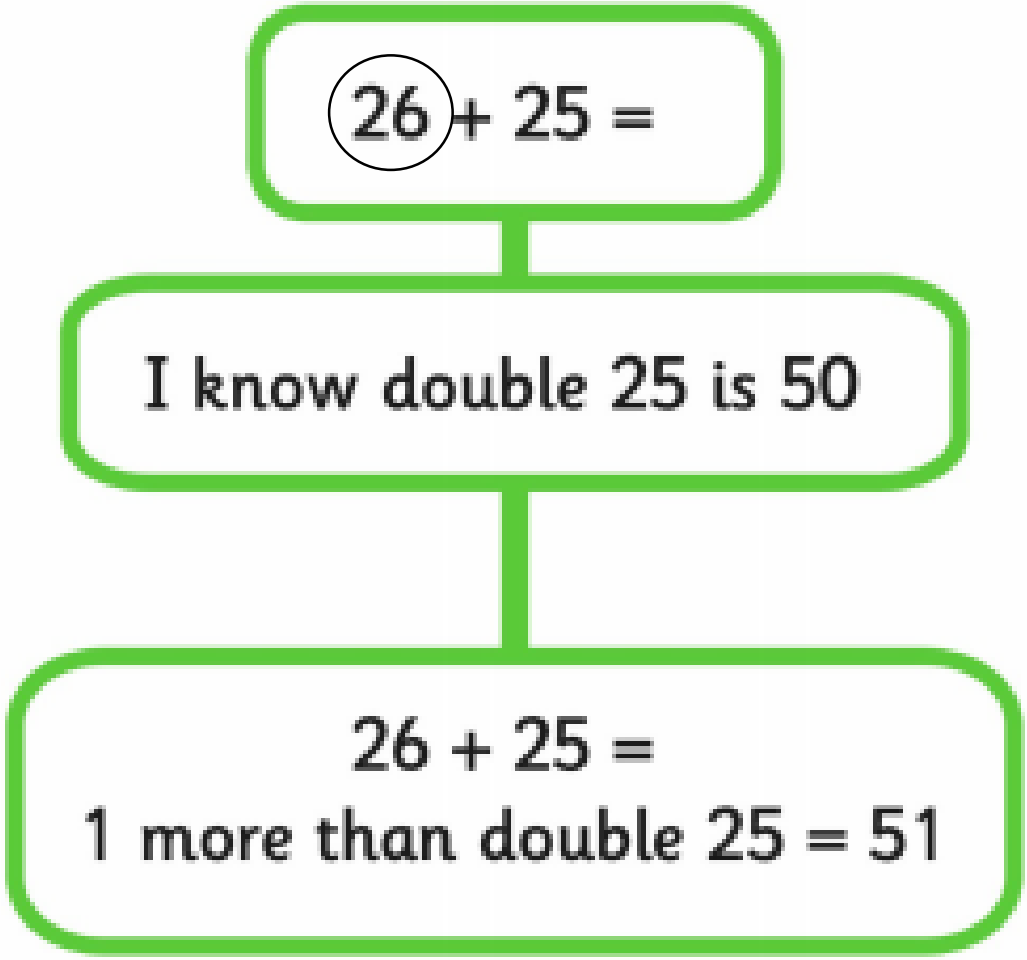
87 - 12 =



Near doubles

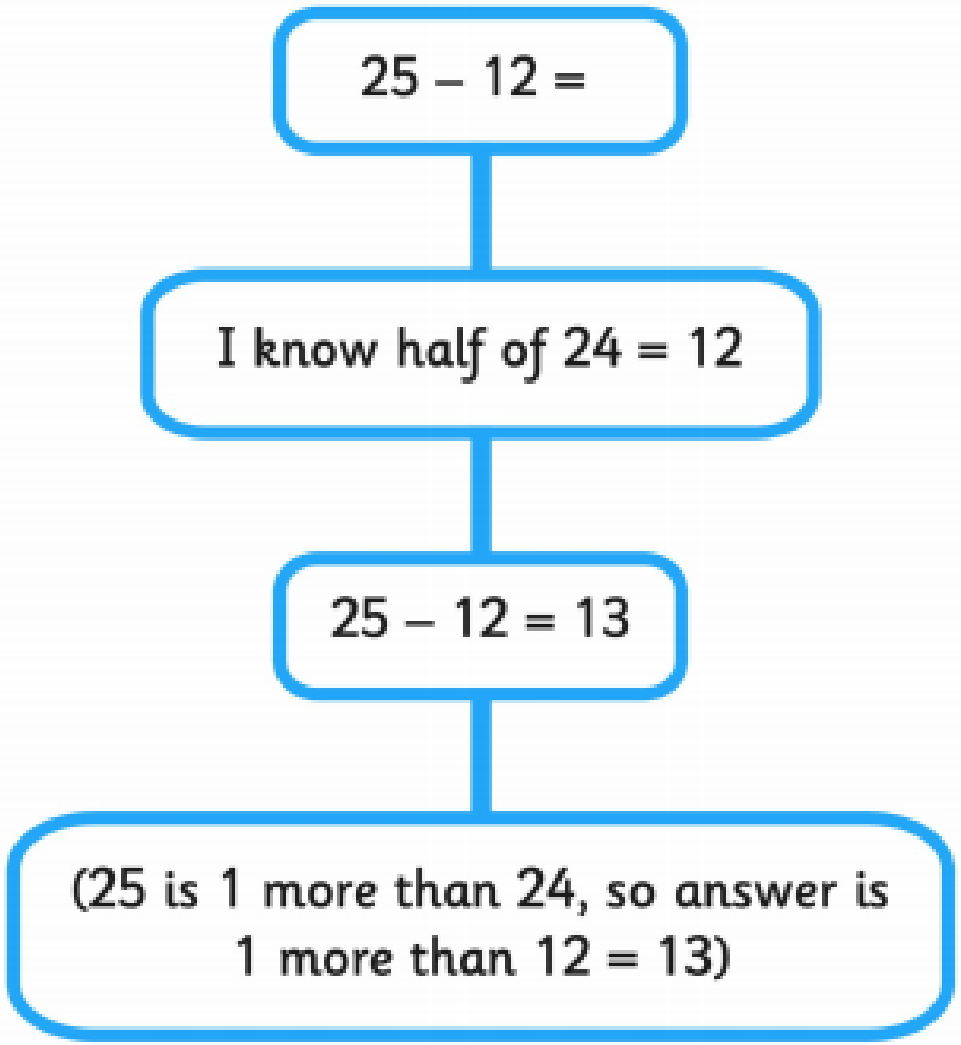
Look for numbers that are similar.

Double one of the numbers and adjust by adding or subtracting the difference.



Near halves

Look for numbers that are 'near half' of your starting number when you are subtracting.



Number bonds to 10, 100, 1000

Knowing number bonds to a 'whole ten' can be used when adding and subtracting to make mental steps more manageable.

This can be developed to support number bonds to hundreds, thousands etc.

230 + 670 =

230 + 70 = 300

300 + 600 = 900

23 + 67 =

30

30 + 60 = 90

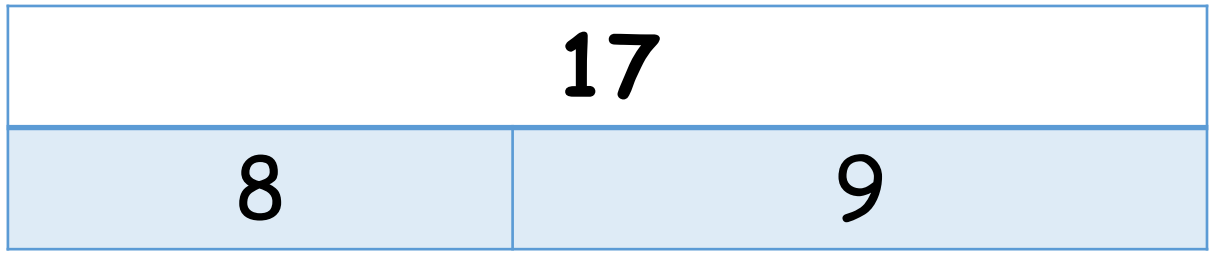
74 - 24 =

74 - 4 = 70

70 - 20 = 50

Number facts within 20 (Part, Part, Whole)

Knowing that 8 + 9 = 17 will help me to solve calculations such as;



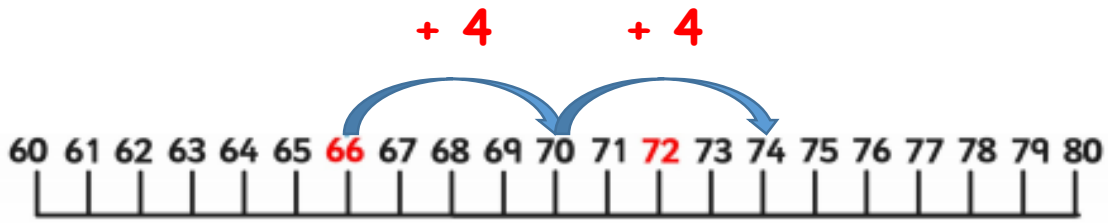
17 - 8 = ? Or 17 - ? = 9 Or ? - 9 = 8

Make ten…and then some

Make a 'whole ten' then add or subtract the rest.

66 + 8

66 + 4 + 4 = 74

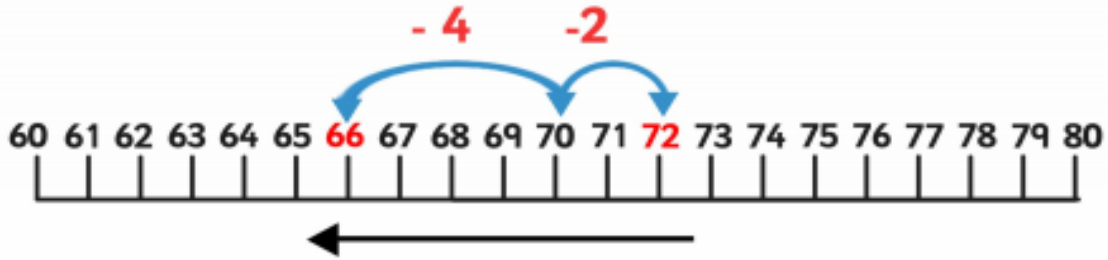


72 – 6 =

72 – 2 = 70 so 72 – 2 – 4 = 66

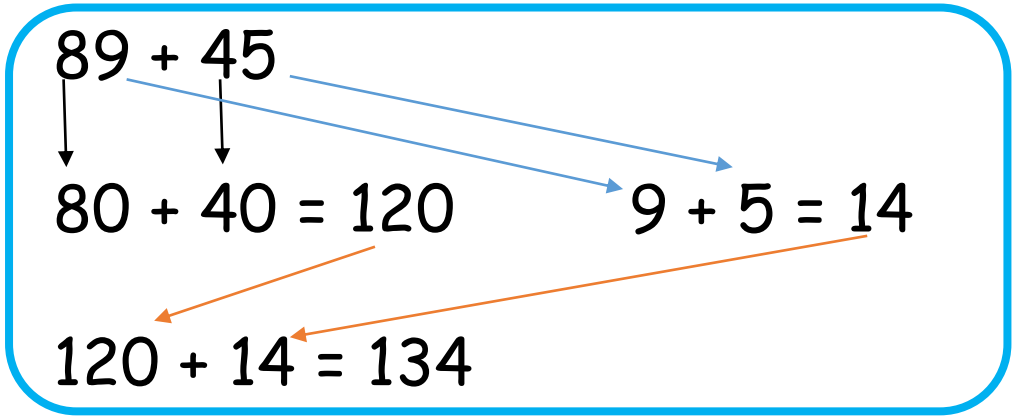
72 - 6

72 - 2 - 4 = 66

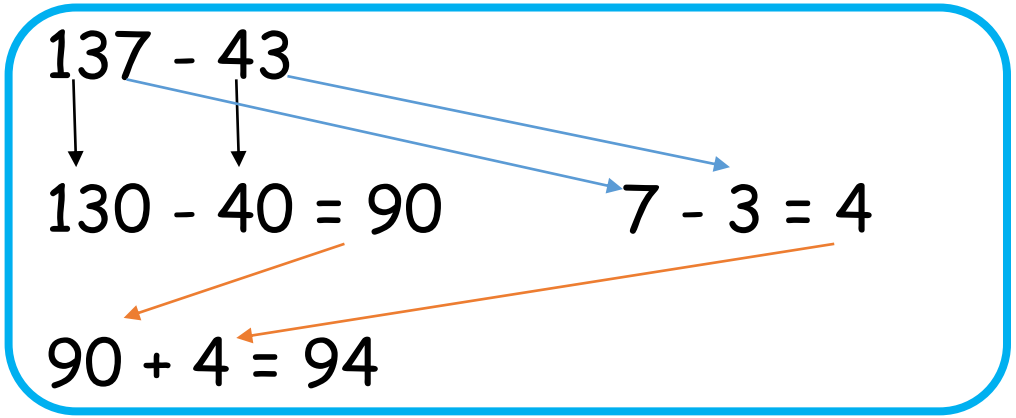


Partitioning (+/-)

Look at the calculation and split the numbers into more manageable numbers to add or subtract.



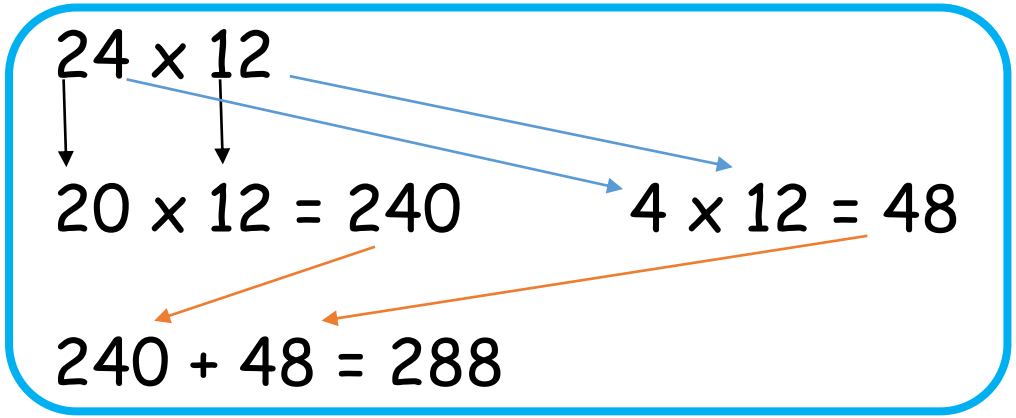
Split the numbers into tens and ones and work them out separately, then add the totals back up.



Partitioning (x)

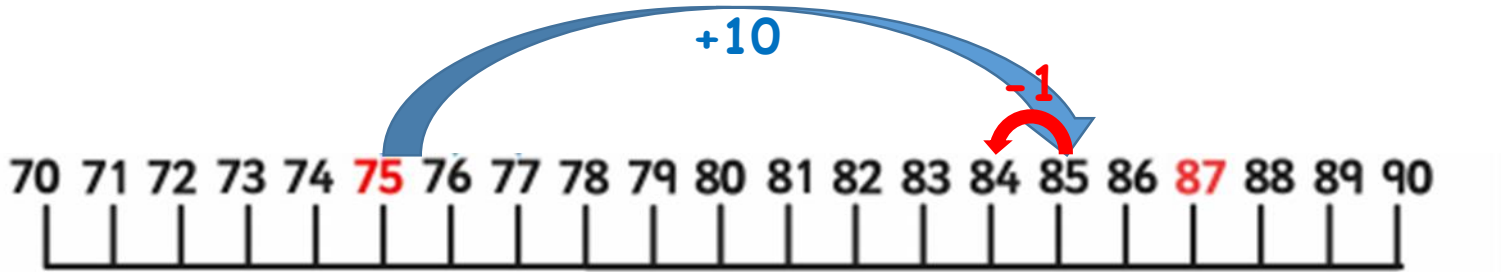
Look at the calculation and split the numbers into more manageable numbers to multiply

Split the numbers into tens and ones and work them out separately, then add the totals back up.



Compensating (+/-)

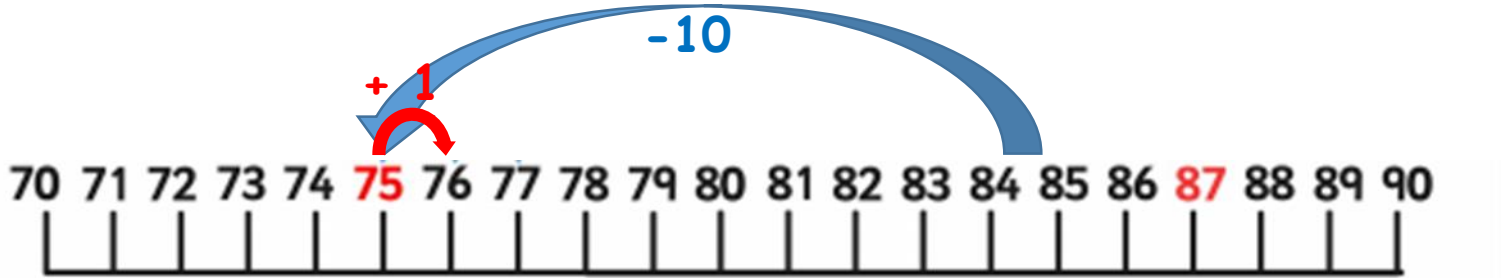
When adding a number ending in 9 round to nearest 'whole ten' then subtract 1.



75 + 9 = 84

75 + 10 - 1 = 84

When subtracting 9 round to nearest 'whole ten' then add 1.



85 - 9 = 76

85 - 10 + 1 = 76

Compensating (x)

Compensating can used to multiply looking for numbers within the times tables that they know.

For example,

399 x 6

(400 is near and easy to solve)

(400 x 6) - 6 = 2400

2400 - 6 = 2394

One 'lot of' 6 was added to make 400 therefore it needs to be subtracted to bring the total back to 399.

Known facts/looking for patterns

If know that 7 + 6 = 13 therefore…
I know that 70 + 60 =130

If know that 15 + 7 = 8 therefore…
I know that 150 + 70 =80

If I know that 4 x 8 = 32 therefore…
I know that 40 x 8 = 320

If I know that 56 ÷ 8 = 7 therefore…
I know that 560 ÷ 8 = 70

Multiplication using doubles and halves

Multiplying by 4 is the same as doing double then double again.
Dividing by 4 is the same as doing half then half again.
200 x 4 = Double 200, then doubled again.
200 ÷ 4 = Half of 200, then half again.

Knowing times tables can be used to support doubling and halving.

27 x 4

Double → 27 x 2 = 54
Double again → 54 x 2 = 108

96 ÷ 4

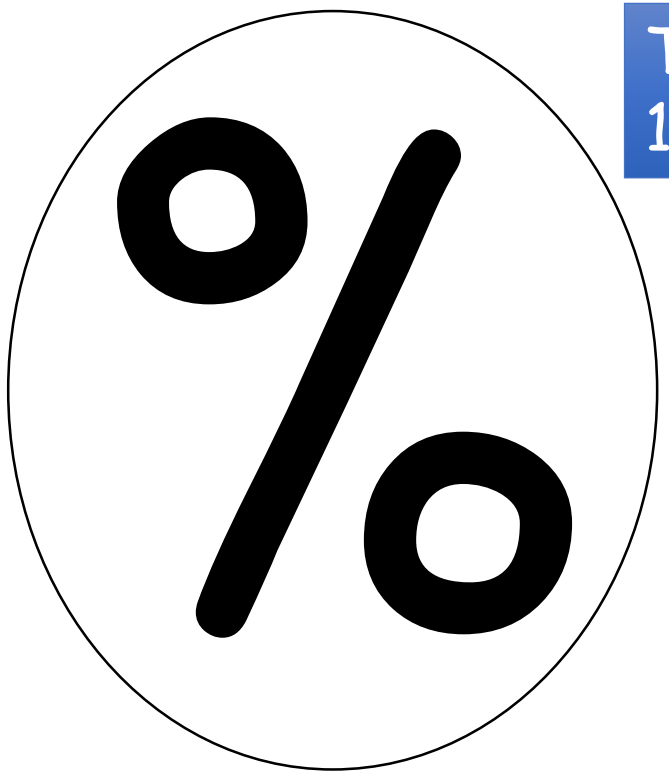
Half → 96 ÷ 2 = 48
Half again → 48 ÷ 2 = 24

Percentages

To find 50%, divide it by 2.
50% of 40 = 20

To find 25%, divide it by 4.
25% of 40 = 10

To find 75%, find 50% and then 25%. The add them together!
75% of 40.
50% of 40 = 20
25% of 40 = 10
20 and 10 = 30



To find 1%, divide it by 100

To find 10%, divide it by 10.
10% of 500 = 50

These strategies can be combined to find any percentage. E.g

11% of a number…
85% of a number…