The sum of the digits for a whole-number is 6.

All the digits are different.

What is the smallest that the number could be?
What is the largest that the number could be?

Example: the sum of the digits for 214 is 7 (2 + 1 + 4 = 7)

EXPLAIN

Agree or disagree:

'To make a large number when the sum of the digits is 6, you need to use a 5.'

'To make a large number where the sum of the digits is 6, use as many digits as possible.'

EXTEND

The sum of the digits for a whole-number is 11.

All the digits are different.

What is the largest that the number could be?
What is the smallest that the number could be?

CORE	EXPLAIN	EXTEND

0.19 is half-way between the numbers in the two blue boxes.

What numbers could be in the blue boxes?

Answer this question in two ways.

EXPLAIN

Explain the mistakes:

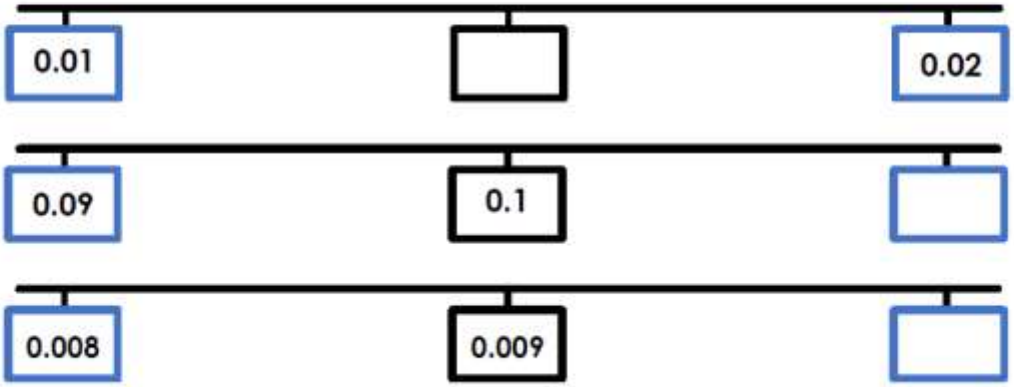
Example A:

Example B:

EXTEND

On each example, the black box is half-way between the two blue boxes.

Fill the gaps:



CORE	EXPLAIN	EXTEND

Rounded to the nearest £10, Alex has £250.

Rounded to the nearest £100, Jim has £400.

Alex and Jim have an exact amount in £ pounds.

What is the greatest possible difference between the amount of money that Alex and Jim have?

EXPLAIN

What is the largest amount that Jim could have?

(a) £399

(b) £404

(c) £449

Spot the correct answer.

Explain the mistakes.

EXTEND

Jim has £98 more than Alex.

How much money could Alex have?

List all possible amounts.

CORE	EXPLAIN	EXTEND

Look at this number line:

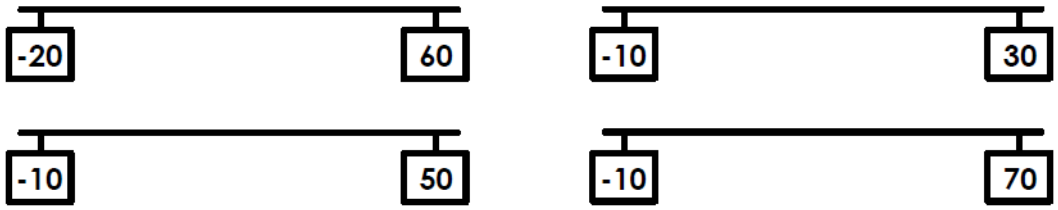
The number in the red box is **negative.**

Which numbers could be in the red and blue boxes?

Challenge: think of two pairs of possible answers.

EXPLAIN

Mark the position of 20 on each number line. *What do you notice?*



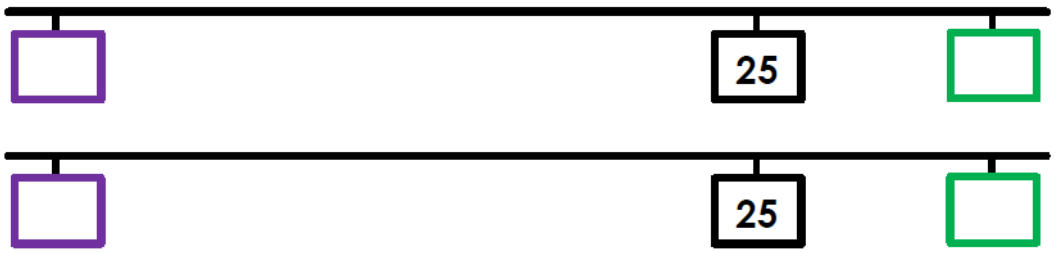
EXTEND

The number in the purple box is negative.

25 is $\frac{3}{4}$ of the distance from the purple box to the green box.

What numbers could be in the purple and green boxes?

Think of two possible pairs of answers.



CORE	EXPLAIN	EXTEND

The first 3 terms of a sequence are positive whole numbers.

To find the next term in the sequence, the same number is subtracted.

-7 is the second **negative** number in the sequence.

Write the first 3 terms of the sequence.
There are different possible ways!

Example sequence: 9, 7, 5…
The second negative number in this sequence is -3

EXPLAIN

Circle the sequences that will include the number 0:

98, 91, 84… **725, 700, 675…** **580, 540, 500…**

Explain how you know.

EXTEND

Design a sequence that matches these rules:

The first term in your sequence must be between 50 and 60.

To find the next term in the sequence, each time the same number is subtracted.

-11 is third negative number in the sequence.

Write the first 3 terms of this sequence.

CORE	EXPLAIN	EXTEND

$10 - 8 < \square - \square$

$20 > \square \times 3$

$\square + 4 = 15 - \square$

Fill the boxes, using each of these numbers once:

4, 5, 6, 7, 8

EXPLAIN

Look at these answers to your question. **Spot the mistakes.**

Mistake 1:

$10 - 8 < \boxed{8} - \boxed{7}$

$20 > \boxed{4} \times 3$

$\boxed{5} + 4 = 15 - \boxed{6}$

Mistake 2:

$10 - 8 < \boxed{8} - \boxed{4}$

$20 > \boxed{6} \times 3$

$\boxed{6} + 4 = 15 - \boxed{5}$

EXTEND

For this task, only use positive whole-numbers.

Order the number sentences by the ***number of possible answers*** (from the fewest to the most possible answers).

$8 \times \square = 30 - \square$

$53 - \square = 48 + \square$

$60 \div \square = 10 + \square$

$28 \div \square = \square \times 2$

CORE	EXPLAIN	EXTEND