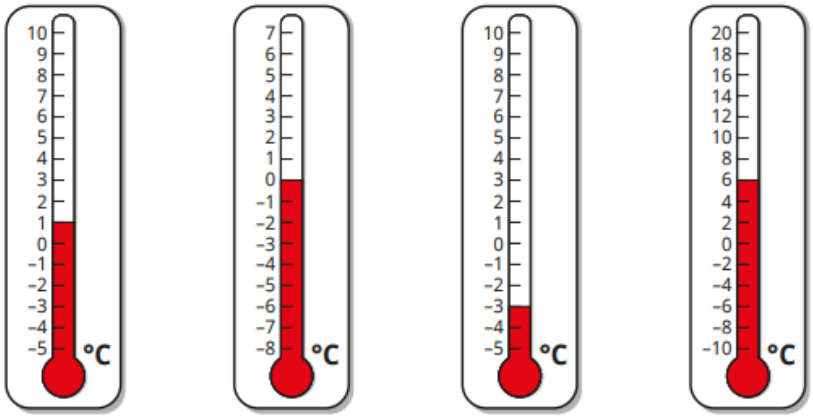
29.09.25

MPI: Understanding negative numbers

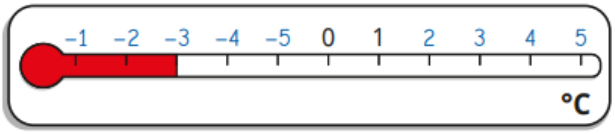
a) Write the temperature shown on each thermometer.



b) What is the warmest temperature shown?

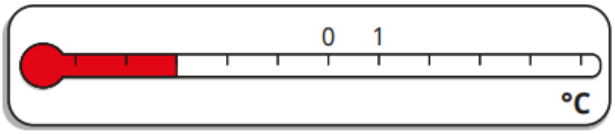
c) What is the coldest temperature shown?

Tiny has labelled a thermometer to work out the temperature.



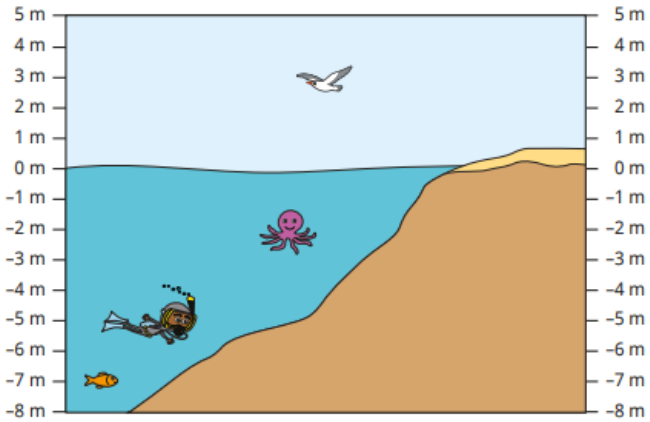
a) What mistake has Tiny made?

b) Correctly label the thermometer.



c) What temperature is shown?

The diagram shows distances above and below sea level.



a) At what height is the bird flying?

b) Is the diver or the octopus swimming deeper in the water?

c) Complete the sentence.

The fish is swimming at ☐ m.

30.09.25

MPI: Counting through zero in multiples

Work out the next three numbers in each sequence.

a) −16, −14, −12 ...

b) −16, −18, −20 ...

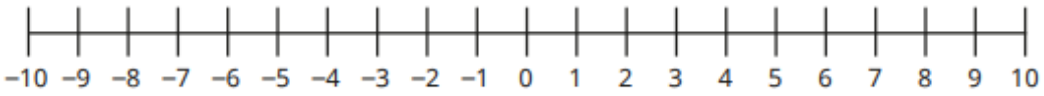
c) −24, −18, −12 ...

d) 24, 18, 12 ...

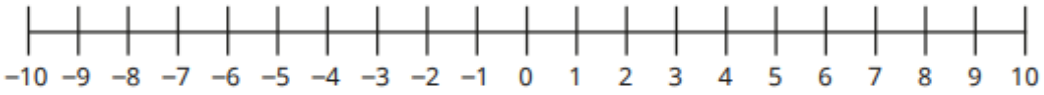
Use the number lines to work out the next four numbers in the sequences.

a) 7, 5, 3 ...

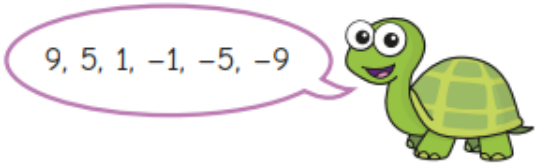
b) −9, −7, −5 ...



c) −10, −7, −4 ...



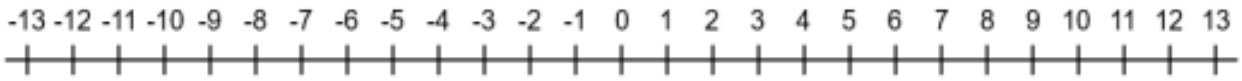
Tiny is counting back in 4s from 9



What mistake has Tiny made?

1.10.25

This game is for two players.
You will need to draw a number line from -13 to 13 on a piece of paper, and find a counter and two 1-6 dice to use.



Decide who is Positive and who is Negative.

Positive moves the counter from left to right and Negative moves the counter from right to left. (Why do you think we have suggested this way round?)

Place the counter on 0.

Take it in turns to throw the two dice and add the scores then move the counter that number of places in your direction.

If the counter reaches -13, Negative has won. If the counter reaches 13, Positive has won.

Is it better to play a game where you have to reach the end exactly, or where you can go over the end? What do you think and why?

Now change the game. This time, when you throw the dice, you can decide whether to add, subtract, multiply or divide the numbers on the dice. You must reach -13 or 13 exactly to win.

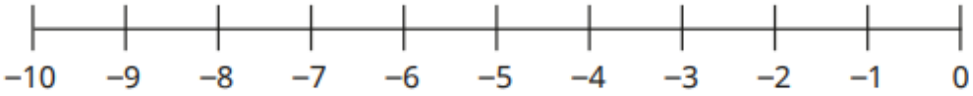
Does this make a better game? What do you think? Why or why not?

How else could you change the game?

01.10.25

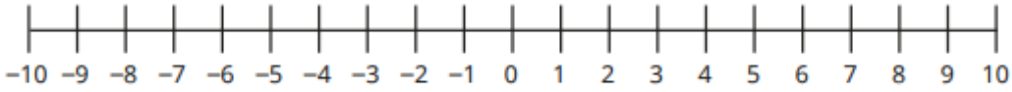
MPI: Counting through zero in multiples

Use the number line to compare the numbers.



−5 ◯ −2 −3 ◯ −8 −1 ◯ 0

Use the number line to compare the numbers.

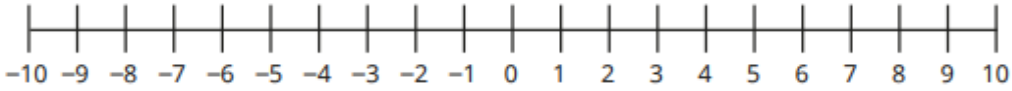


−5 ◯ 2 3 ◯ −8 −1 ◯ 1

What do you notice?

a) Use the number line to write the numbers in ascending order.

−4	3	4	−1	0



b) Now write the numbers in descending order.

What do you notice?

Order the temperatures, starting with the warmest temperature.

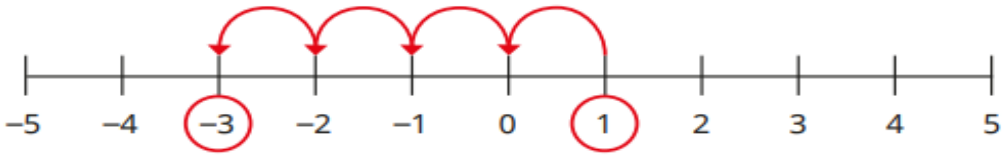
5 °C	−15 °C	4 °C	−30 °C	−5 °C

02.10.25

MPI: Finding the difference

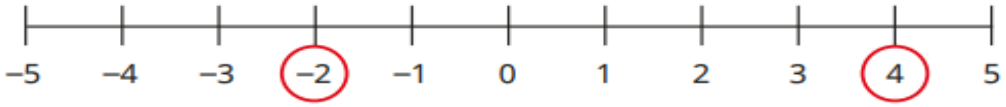
Use the number lines to find the differences.

a)



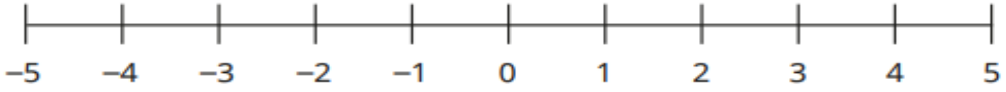
The difference between 1 and −3

b)



The difference between −2 and 4

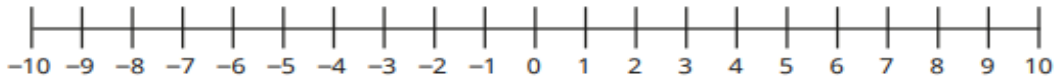
c)



The difference between 5 and −4

What do you notice?

Here is a number line from −10 to 10



a) How many jumps are there from 4 to zero?

b) How many jumps are there from −4 to zero?

c) How many jumps are there from −8 to zero?

d) How many jumps are there from 8 to zero?

What do you notice?

Find the differences between the pairs of numbers.

a) 17 and −21

b) −23 and 8

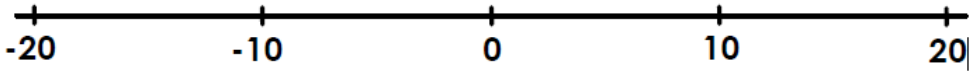
c) 52 and −33

d) 109 and −36

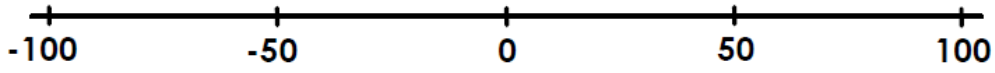
29.09.25 Challenge

Estimate

Position the numbers on the number line: **-8 -14 17 -3**



Position the numbers on the number line: **-34 -58 65 -80**



Rank by Difficulty

What is the **first negative number** in each sequence?

231, 229, 227…

80, 73, 66…

120, 114, 108…

29.09.25 Challenge

Estimate

Position the numbers on the number line: **-8 -14 17 -3**

-20 -10 0 10 20

Position the numbers on the number line: **-34 -58 65 -80**

-100 -50 0 50 100

Rank by Difficulty

What is the **first negative number** in each sequence?

231, 229, 227…

80, 73, 66…

120, 114, 108…

30.09.25

MPI:Counting through zero in multiples

Different Ways

There are 5 numbers in a sequence. 3 of the numbers are positive and 2 of the numbers are negative.

-5 and 7 are two of the numbers in the sequence.

What could the sequence be? *Do in different ways.*

30.09.25

MPI:Counting through zero in multiples

Different Ways

There are 5 numbers in a sequence. 3 of the numbers are positive and 2 of the numbers are negative.

-5 and 7 are two of the numbers in the sequence.

What could the sequence be? *Do in different ways.*

30.09.25

MPI:Counting through zero in multiples

Different Ways

There are 5 numbers in a sequence. 3 of the numbers are positive and 2 of the numbers are negative.

-5 and 7 are two of the numbers in the sequence.

What could the sequence be? *Do in different ways.*

1.10.25 Challenge

Comparing positive and negative numbers

Average monthly temperatures for the South Pole and London:

	South Pole		London	
	Min (°C)	Max (°C)	Min (°C)	Max (°C)
Jan	–30	–26	2	8
Feb	–43	–38	2	8
Mar	–57	–50	4	11
Apr	–61	–53	6	14
May	–62	–54	9	18
Jun	–63	–54	12	21
Jul	–63	–55	14	23
Aug	–63	–55	14	23
Sep	–62	–54	11	20
Oct	–54	–48	8	16
Nov	–40	–36	5	11
Dec	–29	–26	3	8

Which is the coldest temperature recorded in the South Pole?

Which was the warmest temperature recorded in the South Pole?

Which is the coldest temperature recorded in London?

Which was the warmest temperature recorded in London?

Complete the diagram using the temperatures in the table above.

	South Pole	London
Coldest minimum temperature (°C)		
Month of coldest minimum temperature		
Warmest maximum temperature (°C)		
Month of warmest maximum temperature		

02.10.25 Challenge

The temperature at 9 am is –5 °C.

At 1 pm, the temperature is 9 degrees warmer.

At 9 pm, the temperature has dropped 3 degrees since 1 pm.

What is the difference between the temperatures at 9 am and 9 pm?

02.10.25 Challenge

The temperature at 9 am is –5 °C.

At 1 pm, the temperature is 9 degrees warmer.

At 9 pm, the temperature has dropped 3 degrees since 1 pm.

What is the difference between the temperatures at 9 am and 9 pm?