

GCSE MATHS

NEGATIVE NUMBERS

What are Negative Numbers ?

Ordering Negative Numbers

Negative Numbers on a Number Line

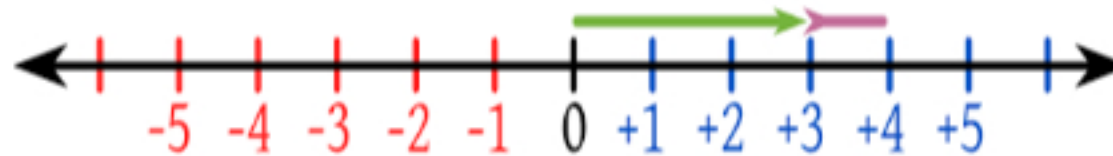
Adding Negative Numbers

Subtracting Negative Numbers

Multiplying Negative Numbers

Dividing Negative Numbers

Word Problems



$$\text{+} + \text{+} = \text{+}$$

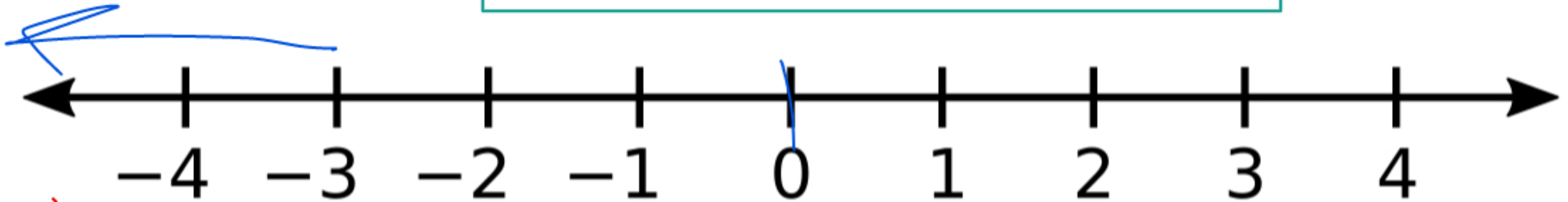
$$\text{-} + \text{-} = \text{-}$$

$$\text{+} + \text{-} = \text{+}$$

$$\text{+} + \text{-} = \text{-}$$

WHAT ARE NEGATIVE NUMBERS

They are seen in temperature measures, pressure measures, bank balances.



NEGATIVE NUMBERS

Decreasing Order

POSITIVE NUMBERS

Increasing Order

Numbers to the left side of the number line are negative numbers

They are decreasing as we move towards the left.

Numbers to the right are positive numbers

They are increasing towards the right.

a) If a number is closer to zero it will be bigger as compared to the number further away from zero.

b) Negative numbers decreases as we move towards the left of the number line.

Q1 Write each sets of numbers from smallest to largest

a) 10 0 -5 -1 3 8

$-5 < -1 < 0 < 3 < 8 < 10$

b) -58 45 33 -22 47 -81

a) If a number is closer to zero it will be bigger as compared to the number further away from zero.

b) Negative numbers decreases as we move towards the left of the number line.

Q1 Write each sets of numbers from smallest to largest

a) 10 0 -5 -1 3 8
→ -5 -1 0 3 8 10

b) -58 45 33 -22 47 -81
-81 -58 -22 33 45 47

$$\text{(+)} + \text{(+)} = \text{(+)}$$

$$\text{(-)} + \text{(-)} = \text{(-)}$$

$$\text{(+)} + \text{(-)} = \text{(+)}$$

$$\text{(+)} + \text{(-)} = \text{(-)}$$

a) $37 - 51 =$

b) $-21 - 35 =$

c) $37 - 25 =$

d) $45 - 33 =$

When the signs are same
always add but the sign will always
be of a bigger number

When the signs are opposite
always subtract but the sign will
always be of a bigger number.

e) $-37 + 21$

f) $-52 + 60$

$$\text{(+)} + \text{(+)} = \text{(+)}$$

$$\text{(-)} + \text{(-)} = \text{(-)}$$

$$\text{(+)} + \text{(-)} = \text{(+)}$$

$$\text{(+)} + \text{(-)} = \text{(-)}$$

$$a) \quad 37 - 51 = -14$$

$$b) \quad -21 - 35 = -56$$

$$c) \quad \begin{array}{r} 37 \\ -25 \\ \hline 12 \end{array} = 12$$

$$d) \quad 45 - 33 = 12$$

When the signs are same
always add but the sign will always
be of a bigger number

When the signs are opposite
always subtract but the sign will
always be of a bigger number.

$$e) \quad \begin{array}{r} -37 \\ +21 \\ \hline -16 \end{array}$$

$$f) \quad \begin{array}{r} -52 \\ +60 \\ \hline 8 \end{array}$$



-	+	=	-
+	-	=	-
-	-	=	+
+	+	=	+

If two signs are the same change them to positive sign.

If two signs are opposite change them to negative sign.

Follow addition rules

a) $5 - (-2) + (-3)$
 $7 - 3 = 4$
 $5 + 2 - 3 = 4$

b) $16 + (-5) - (+35)$

c) $-10 - 5 + (-32)$



-	+	=	-
+	-	=	-
-	-	=	+
+	+	=	+

If two signs are the same change them to positive sign.

If two signs are opposite change them to negative sign.

Follow addition rules

$$a) \quad 5 - (-2) + (-3)$$

$$= 5 + 2 - 3$$
$$= 7 - 3$$
$$= 4$$

$$b) \quad 16 + (-5) - (+35)$$

$$= 16 - 5 - 35$$
$$= 16 - 40$$
$$= -24$$

$$c) \quad -10 - 5 + (-32)$$

$$= 10 - 5 - 32$$
$$= 10 - 37$$
$$= -27$$

When the signs are opposite
the answer will have a - sign

When the signs are same the answer
will have a + sign

a) $-5 \times -3 = 15$

b) $10 \times 2 =$

c) -15×2

d) -6×3

e) 2×-3

When the signs are opposite
the answer will have a - sign

When the signs are same the answer
will have a + sign

$$a) -5 \times -3 = 15$$

$$b) 10 \times 2 = 20$$

$$c) -15 \times 2 = -30$$

$$d) -6 \times 3 = -18$$

$$e) 2 \times -3 = -6$$

When the signs are opposite
the answer will have a - sign

When the signs are same the answer
will have a + sign

a) $28 \div 7$

b) $36 \div -6$

c) $-45 \div -5$

d) $-30 \div 6$

When the signs are opposite
the answer will have a - sign

When the signs are same the answer
will have a + sign

$$a) \quad 28 \div 7 = 4 \quad \checkmark$$

$$b) \quad 36 \div -6 = -6$$

$$c) \quad -45 \div -5 = 9 \quad \checkmark$$

$$d) \quad -30 \div 6 = -5 \quad \checkmark$$

The table shows the temperature of a city in Europe at different time intervals.

Time	Temperature $^{\circ}\text{C}$
Midnight	-7
2 a.m	-15
4 a.m	-25
6 a.m	-20
8 a.m	-5
10 a.m	0
12 noon	5
4 pm	7

a) At what time the temperature is the lowest

-25

b) At what time the temperature is highest

7

c) Find the difference between highest and lowest temperature

d) Difference between
(1) 6 am and 8 a.m
(2) 4 am and 12 noon

The table shows the temperature of a city in Europe at different time intervals.

Time	Temperature °C
Midnight	- 7
2 a.m	- 15
4 a.m	- 25
6 a.m	- 20
8 a.m	- 5
10 a.m	0
12 noon	5
4 pm	7

a) At what time the temperature is the lowest

4 a.m which is -25

~~b) At what time the temperature is highest~~

4 p.m which is 7

c) Find the difference between highest and lowest temperature

$$7 - (-25) = 32 \text{ degrees}$$

d) Difference between

(1) 6 am and 8 a.m = $-5 - (-20) = 15 \text{ degrees}$

(2) 4 am and 12 noon = $5 - (-25) = 29 \text{ degrees}$



NEXT STEP

★ CHECK SPECIFICATION

★ EXAM QUESTIONS ON THE TOPIC

SUBSCRIBE >



@expertguidance
#mahimalaroyia

Get A* in GCSE and A LEVEL Science and Maths by Mahima Laroyia
Private group

Interacting as Mahima Laroyia

About
Discussion
Units
Members

TEXTBOOK CONFUSING?
STRUGGLING TO WRITE ACCORDING TO THE MARKSCHEME?

Free
Online Consultation with Mahima Laroyia
Oxford Post Graduate with 10 years of