GCSE MATHS NEGATIVE NUMBERS

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EXPERT GUIDANCE

WHAT ARE NEGATIVE NUMBERS

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

$$-4 \quad -3 \quad -2 \quad -1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4$$

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.

ADDITION

- 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.

a) $37 - 51 = -14$

b) $-21 - 35 = -56$

c) $37 - 25 = 12$

d) $45 - 33 = 12$

SUBTRACTION

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

b) $16 + (-5) - (+35)$
$= 16 - 5 - 35$
$= 16 - 40$
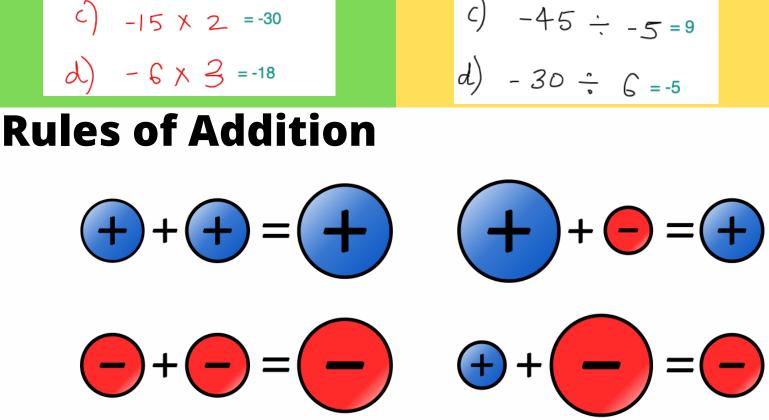$= -24$

c) $-10 - 5 + (-32)$
$= 10 - 5 - 32$
$= 10 - 37$
$= -27$

MULTIPLICATION

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

DIVISION

- WHEN THE SIGNS ARE OPPOSITE THE ANSWER WILL HAVE A - SIGN
- WHEN THE SIGNS ARE SAME THE ANSWER WILL HAVE A + SIGN

a) $28 \div 7 = 4$

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

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

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

Rules of Addition

$$(+) + (+) = (+)$$

$$(+) + (-) = (+)$$

$$(-) + (-) = (-)$$

$$(+) + (-) = (-)$$

WORD PROBLEM

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 degrees

d) Difference between
(1) 6 am and 8 a.m = -5-(-20)= 15 degrees
(2) 4 am and 12 noon 5-(-25) = 29 degrees

Symbols 24

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