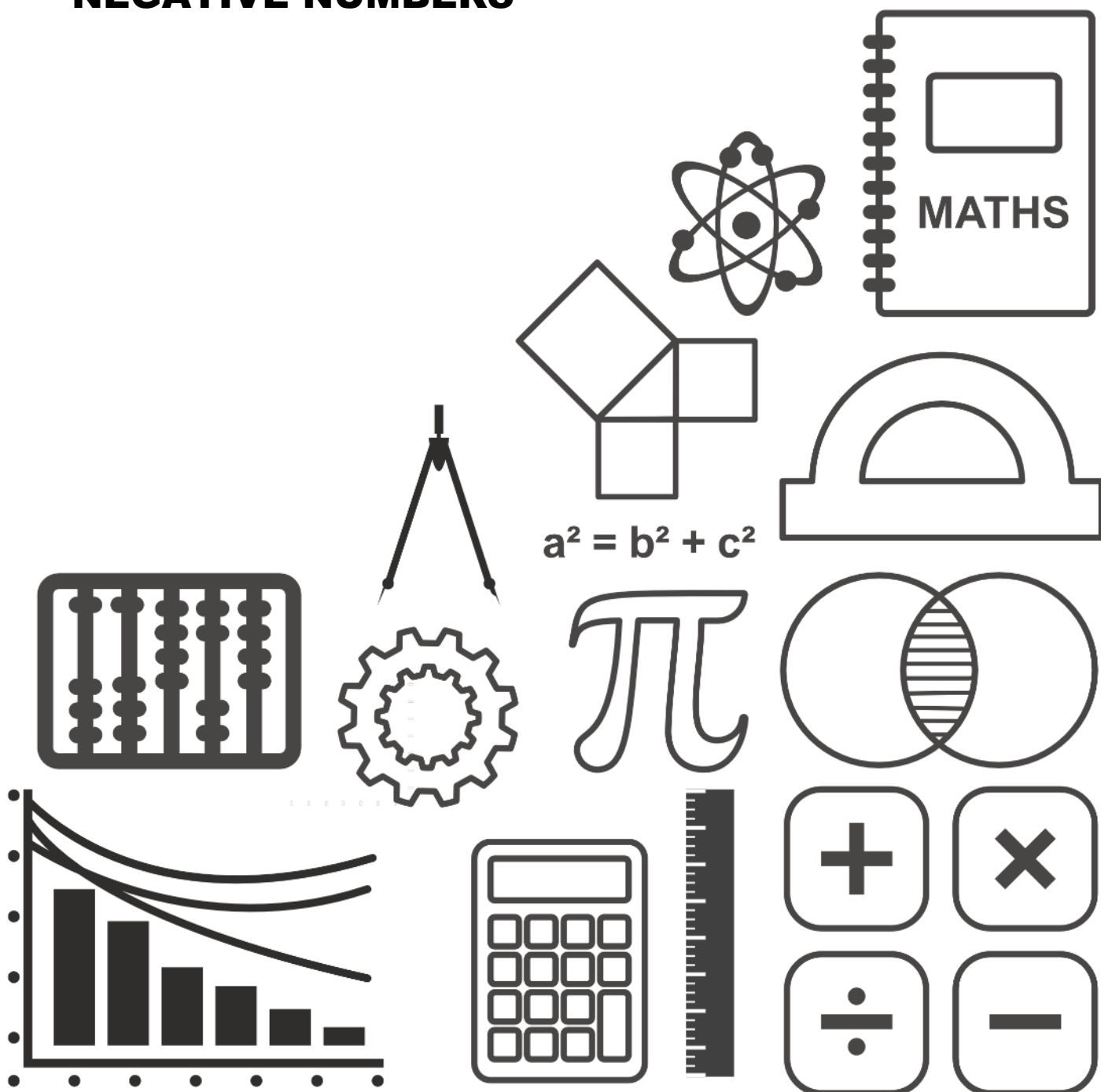


MATHSDIY

GCSE TOPIC BOOKLET NEGATIVE NUMBERS



1. The following table shows the midday temperatures in four cities for one day in December.

City	Temperature in °C
Glasgow	-10
Birmingham	-6
Cardiff	2
London	-1

(i) What is the difference in the midday temperatures in London and Birmingham?

.....

(ii) On the same day, in Cardiff, the temperature at 21.00 was eight degrees lower than the midday temperature.
What was the temperature at 21.00?

.....

(iii) On the same day, in Glasgow, the temperature at 15.00 had risen by 3°C.
What was the temperature at 15.00?

.....

[3]

2. Complete the following table which shows the temperature at 8:00am, the change in temperature and the temperature at noon in each of five cities.
The first one has been done for you.

Place	Temperature at 8:00am	Change in temperature	Temperature at noon
Paris	-2°C	Up 3°C	1°C
Moscow	-5°C	Down 4°C	
Warsaw	-2°C		0°C
Swansea		Down 4°C	-3°C
Murmansk	-8°C		-3°C

[4]

3.

The table below gives the highest and lowest temperatures, in °C, recorded at 5 cities in a year.

City	York	Paris	Cairo	Moscow	Sydney
Highest temperature	26	31	37	29	34
Lowest temperature	-8	-5	5	-23	4

(a) In which city was the lowest temperature recorded?

[1]

(b) What is the difference between the highest temperature in York and the lowest temperature in York?

[1]

(c) How much colder is the lowest temperature in Moscow than the lowest temperature in Paris?

[1]

4.

Complete the following table.
The first row has been completed for you.

Place	Temperature at 10 p.m.	Change	Temperature at 10 a.m. next day
Aberystwyth	-1°C	Up 4°C	3°C
Bangor	-3°C		0°C
Cardiff	-4°C	Down 3°C	
Denbigh		Up 4°C	-1°C

[3]

5. (a) One day, the temperature in Swansea at 10.00 am was 4°C .
By 3.00 pm the temperature had risen by 8°C .
What was the temperature at 3.00 pm?

.....
.....

[1]

- (b) One day, the temperature in Bangor at 2.00 pm was 5°C .
At 11.00 pm the temperature had dropped by 9°C .
What was the temperature at 11.00 pm?

.....
.....

[1]

- (c) The temperature inside a freezer was -25°C .
The electricity went off for a couple of hours and the temperature in the freezer became -18°C .
By how many degrees did the temperature change?

.....
.....

[1]

6. The following table shows four places and their height above sea level.

Place	Height above sea level (in metres)
Llyn Cowlyd, Wales	355
Chott Melrhir, Algeria	-40
Lake Eyre, Australia	-15
The Fens, England	-4

- (a) Explain what it means to write the height of Lake Eyre above sea level as -15 .

.....
.....

[1]

- (b) Which place is the lowest of the four?

.....

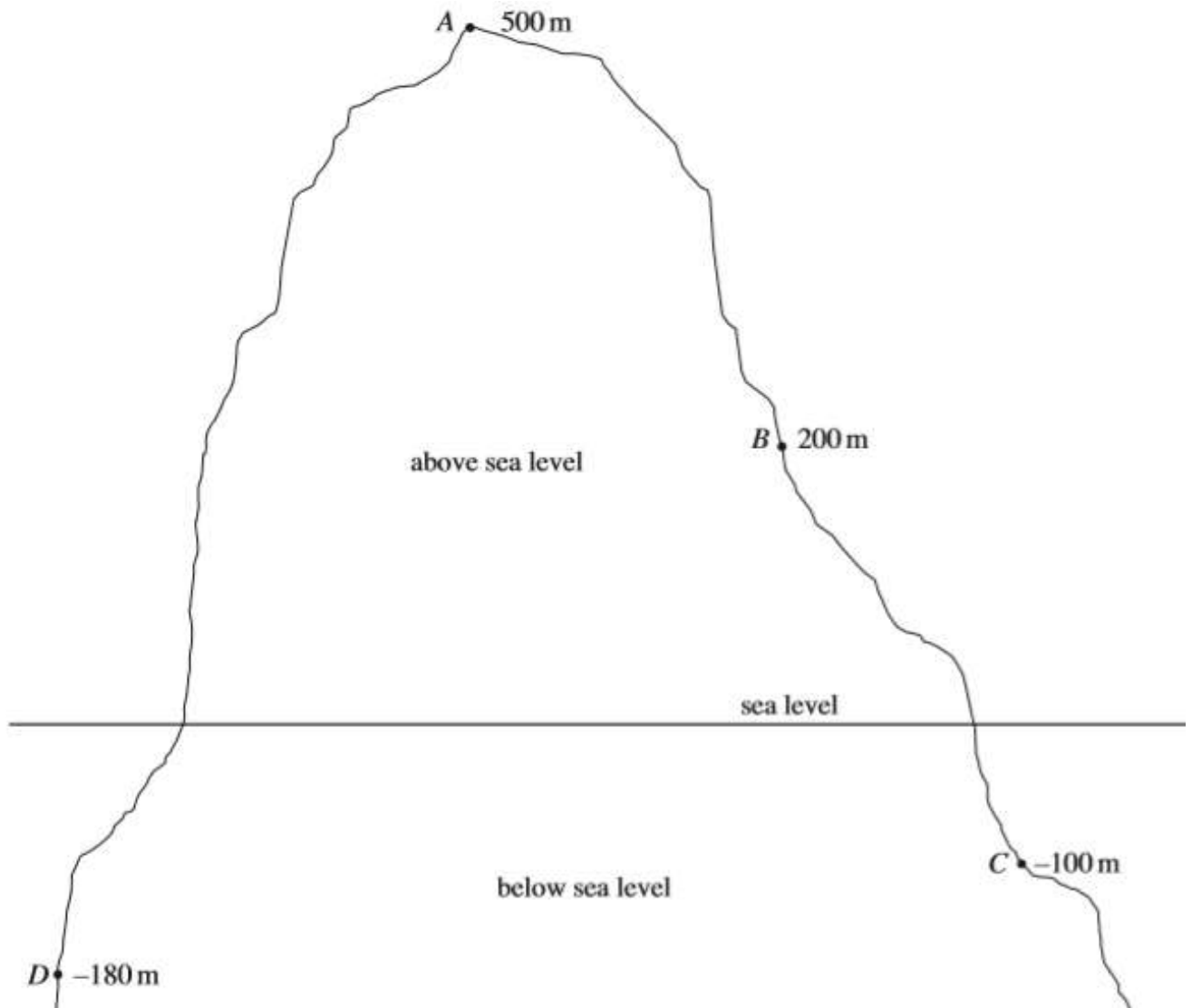
[1]

- (c) How much higher than Chott Melrhir is Llyn Cowlyd?

.....

[1]

7.



The diagram illustrates a mountain that is partly above sea level and partly below sea level.

The point A is 500 m above sea level.

The point C is 100 m below sea level and its height is shown as -100 m on the diagram.

(a) On the diagram

- (i) mark a point X that is 100 m above sea level,
- (ii) mark a point Y that is 50 m below sea level.

[2]

(b) How much higher is the point B than the point C ?

.....

.....

[1]

- (c) The point E is 40 m below the level of D .
Write down its height above sea level.

[1]

8. On the Glenberry golf course, golfers are expected to take 72 shots to get around the course.

A golfer who takes 74 shots gets a score of $+2$ because he/she has taken 2 shots more than the 72.

A golfer who takes 69 shots gets a score of -3 because he/she has taken 3 shots less than the 72.

- (a) What would be the score of a golfer who takes 78 shots?

[1]

- (b) What would be the score of a golfer who takes 68 shots?

[1]

- (c) Tom and Jack are 2 golfers.
Tom gets a score of -4 whilst Jack gets a score of $+1$.
Whose score is the better and by how much?

[1]

- (d) In a competition, golfers play the course 4 times.
Linda's scores were -3 , -2 , $+1$ and -4 respectively.
What is her total score for the competition?

[2]

9. The table below gives the warmest and coldest temperatures recorded in London during 2009.

London 2009	°C
Warmest day	30
Coldest day	-1
Warmest night	18
Coldest night	-6

(a) What was the coldest temperature recorded?

..... [1]

(b) What is the difference between the temperatures of the coldest day and the coldest night?

..... [1]

(c) What is the difference between the temperatures of the warmest night and the coldest night?

..... [1]

10.

The following table shows, for five different places,

- the temperatures at midday on 2 different days,
- the change of temperature between the 2 days.

Complete the table.

Place	Temperature on day 1	Temperature on day 2	Change in temperature
Bangor	-4	2	up 6
Toronto	3	-2	
Glasgow	-1		down 3
Moscow	-2	-6	
Reykjavik		-5	up 2

[4]

11. In a game, a person scores

- 3 points for a win,
- 1 point for a draw,
- -2 points for a loss.

(a) Geraint plays the game **four times**.
He wins twice, draws once and loses once.
What is Geraint's score?

[2]

.....

.....

(b) Mary plays the game **four times** and has a final score of 0.
Write down the number of wins, draws and losses Mary had and justify your answer. [2]

.....

.....

.....

(c) John plays the game **five times** and has a final score of -4.
Write down the number of wins, draws and losses John had and justify your answer. [2]

.....

.....

.....

12. (a) Complete the following table, which shows the temperature at 11:00p.m., the change in temperature and the temperature at 11:00a.m. the next day, in each of three places. The first one has been done for you.

Place	Temperature at 11:00p.m.	Change	Temperature at 11:00a.m. next day
Swansea	-1°C	Up 4°C	3°C
New York	-2°C		0°C
Moscow		Up 5°C	-3°C

[2]