

Edexcel GCSE

Mathematics (Linear) – 1MA0

NEGATIVE NUMBERS

Materials required for examination

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers

Nil



Instructions

Use black ink or ball-point pen.

Fill in the boxes at the top of this page with your name, centre number and candidate number.

Answer all questions.

Answer the questions in the spaces provided – there may be more space than you need.

Calculators may be used.

Information

The marks for each question are shown in brackets – use this as a guide as to how much time to spend on **each** question.

Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.

Advice

Read each question carefully before you start to answer it.

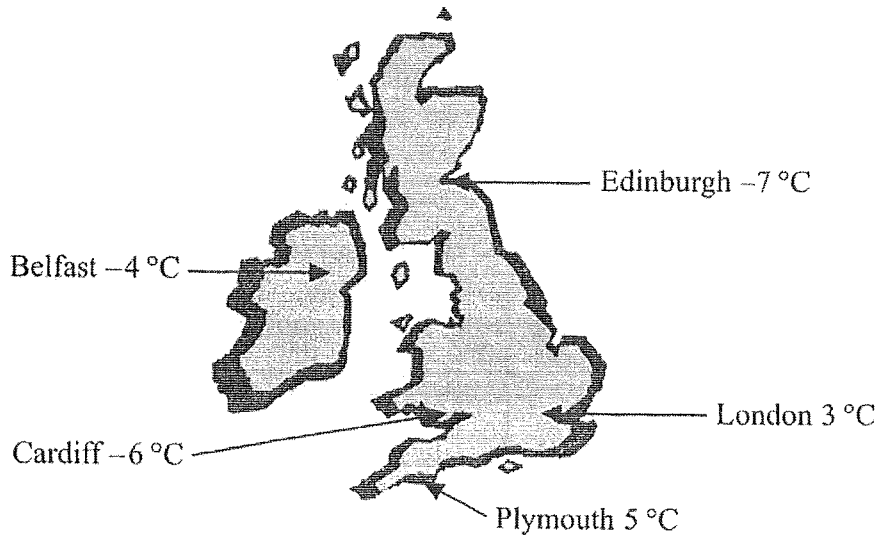
Keep an eye on the time.

Try to answer every question.

Check your answers if you have time at the end.

1. Here is a map of the British Isles.

The temperatures in some places, one night last winter are shown on the map.



- (a) (i) Write down the names of the two places that had the biggest difference in temperature.

Edinburgh and Plymouth

- (ii) Work out the difference in temperature between these two places.

Edinburgh -7°C
Plymouth 5°C 12°C

(3)

- (b) Two pairs of places have a difference in temperature of 2°C .
Write down the names of these places.

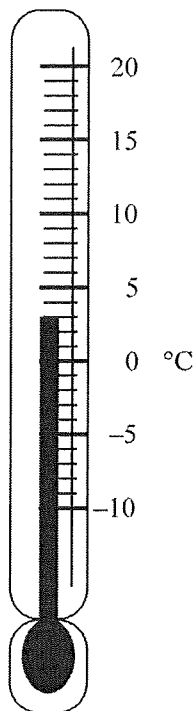
(i) London and Plymouth

(ii) Belfast and Cardiff

(2)

(Total 5 marks)

2.



(a) Write down the temperature shown on the thermometer.

.....3... °C

(1)

The temperature falls by 8°C.

(b) Work out the new temperature.

.....-5... °C

(1)

(Total 2 marks)

3. Sally wrote down the temperature at different times on 1st January 2003.

Time	Temperature
midnight	-6°C
4 am	-10°C
8 am	-4°C
noon	7°C
3 pm	6°C
7 pm	-2°C

- (a) Write down

- (i) the **highest** temperature,

.....7..... $^{\circ}\text{C}$

- (ii) the **lowest** temperature.

-10°C

(2)

- (b) Work out the difference in the temperature between

- (i) 4 am and 8 am,

-10°C -4°C

.....6..... $^{\circ}\text{C}$

- (ii) 3 pm and 7 pm.



.....8..... $^{\circ}\text{C}$

(2)

At 11 pm that day the temperature had fallen by 5°C from its value at 7 pm.

- (c) Work out the temperature at 11 pm.

At 7pm -2°C

$-2 - 5$

At 11pm -7°C

..... -7 $^{\circ}\text{C}$

(1)

(Total 5 marks)

4. The table shows the temperature on the surface of each of five planets.

Planet	Temperature
Venus	480 °C
Mars	- 60 °C
Jupiter	- 150 °C
Saturn	- 180 °C
Uranus	- 210 °C

- (a) Work out the difference in temperature between Mars and Jupiter.

Mars - 60°C
Jupiter - 150°C

.....90°C

(1)

- (b) Work out the difference in temperature between Venus and Mars.

Venus 480°C
Mars - 60°C

.....540°C

(1)

- (c) Which planet has a temperature 30 °C higher than the temperature on Saturn?

Saturn -180°C
- 180 + 30 = -150

.....-150°C

(1)

The temperature on Pluto is 20 °C lower than the temperature on Uranus.

- (d) Work out the temperature on Pluto.

Uranus - 210°C
Pluto - 210 - 20 = -230

.....-230°C

(1)

(Total 4 marks)

5. The table shows temperatures at midnight and midday on one day in five cities.

City	Midnight temperature	Midday temperature
Belfast	-3°C	4°C
Cambridge	-1°C	4°C
Edinburgh	-7°C	-1°C
Leeds	-6°C	3°C
London	-2°C	6°C

- (a) Which city had the lowest midnight temperature?

Edinburgh

(1)

- (b) How many degrees higher was the midnight temperature in Cambridge than the midnight temperature in Leeds?

Cambridge -1°C
Leeds -6°C

.....5..... $^{\circ}\text{C}$

(1)

- (c) Which city had the greatest rise in temperature from midnight to midday?

Belfast	-3°C	4°C	7°C
Cambridge	-1°C	4°C	5°C
Edinburgh	-7°C	-1°C	6°C
Leeds	-6°C	3°C	<u>9°C</u>
London	-2°C	6°C	8°C

(1)

(Total 3 marks)

Leeds

6. The table shows the temperatures in four cities at noon one day.

Oslo	-13°C
New York	-5°C
Cape Town	9°C
London	2°C

- (a) Write down the **highest** temperature.

.....9..... $^{\circ}\text{C}$

(1)

- (b) Work out the difference in temperature between Oslo and New York.

Oslo -13°C

New York -5°C

.....8..... $^{\circ}\text{C}$

(1)

At 8 pm the temperature in London was 3°C lower than the temperature at noon.

- (c) Work out the temperature in London at 8 pm.

London 2

8pm $2 - 3 = -1$

.....-1..... $^{\circ}\text{C}$

(1)

(Total 3 marks)

7. The table shows the midday temperatures in 4 different cities on Monday.

City	Midday temperature ($^{\circ}\text{C}$)
Belfast	5
Cardiff	-1
Glasgow	-6
London	-4

- (a) Which city had the lowest temperature?

Glasgow

(1)

- (b) Work out the difference between the temperature in Cardiff and the temperature in Belfast.

Cardiff 1°C

Belfast 5°C

.....6..... $^{\circ}\text{C}$

(1)

By Tuesday, the midday temperature in London had risen by 7 °C.

- (c) Work out the midday temperature in London on Tuesday.

$$-4 + 7 = 3$$

.....3° C

(1)

(Total 3 marks)

8. The table shows the temperature in each of 6 cities on 1st January 2003.

City	Temperature
Cairo	15 °C
Copenhagen	-1 °C
Helsinki	-9 °C
Manchester	3 °C
Moscow	-14 °C
Sydney	20 °C

- (a) Write down the name of the city which had the **lowest** temperature.

.....Moscow.....

(1)

- (b) Work out the difference in temperature between Copenhagen and Cairo.

Copenhagen -1°C
Cairo 15°C

.....16.....°C

(1)

On 2nd January 2003, the temperature in Moscow had increased by 4 °C.

- (c) Work out the new temperature in Moscow.

$$-14 + 4 = 10$$

.....10.....°C

(1)

(Total 3 marks)