

## NCFE Level 2 Functional Skills Qualification in Mathematics (603/5060/X)

Paper number: P001259  
Section A: Non-calculator Test



**Assessment window:** Monday 9 December 2019 – Friday 13 December 2019  
**Time allowed:** 30 minutes

### Learner instructions

- Answer **all** questions.
- Read each question carefully.
- Write your answers in the spaces provided.
- Show your working, as marks may be awarded for working.
- State units in your answers, where appropriate.
- Check your work.

### Learner information

- Section A contains **Activity 1** only.
- The maximum mark for this section is **15**.
- The marks available for **each** question are shown in brackets.

To be completed by the examiner		Mark
A	Activity 1	/ 15
B	Activity 2	/ 15
	Activity 3	/ 15
	Activity 4	/ 15
TOTAL MARK		/ 60

### Resources

You will need a:

- pen, with black or blue ink
- pencil and eraser
- 30 cm ruler
- protractor.

If extra pages are used, please make sure your name and centre name are on them and they are securely fastened to this booklet.

**Please complete the details below clearly and in BLOCK CAPITALS.**

Learner name \_\_\_\_\_

Centre name \_\_\_\_\_

Learner number

Centre number

**Do not turn over until the invigilator tells you to do so.**

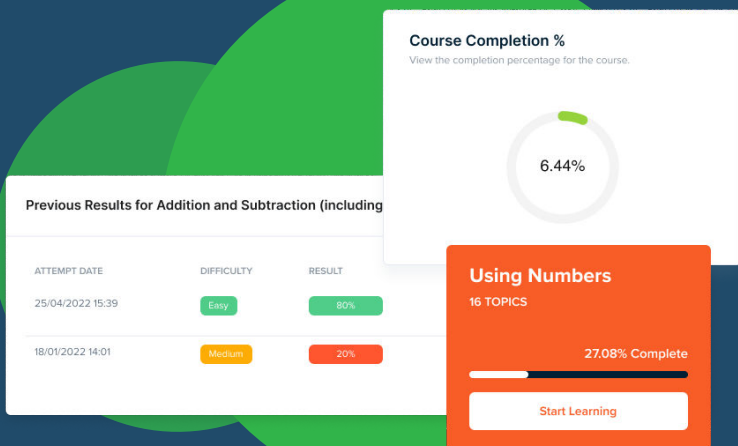
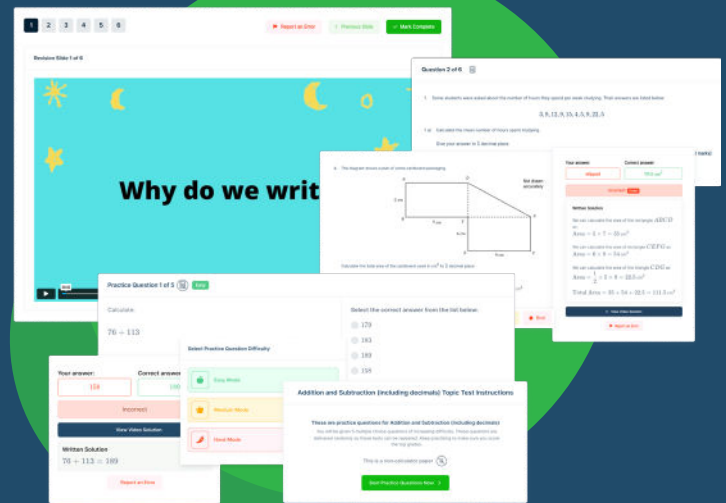


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**Activity 1: Weather**

1 (a) Zak is a journalist.

He is writing an article about the local weather.

This table shows the highest and lowest temperatures in Zak's town for two different years. –

Year	Lowest	Highest
2014	-3.4°C	20.3°C
2018	-0.2°C	23.4°C

Which year had the greater difference between highest and lowest temperatures?

Show how you decide.

[1 mark]

$$20.3 - (-3.4) = 23.7$$

$$23.4 - (-0.2) = 23.6$$

Your answer:

2014.

1 (b)

Zak works out the percentage of days last year that the temperature fell below 0°C

His calculator gives the answer 8.219178082

Write this percentage to 2 decimal places.

[1 mark]

Your answer:

8.22 %

- 1 (c) The highest temperature recorded in Zak's town this year was  $32.9^{\circ}\text{C}$

Zak writes the headline,

**"Temperature reaches  $95^{\circ}\text{F}$ !"**

A formula to convert between  $^{\circ}\text{C}$  and  $^{\circ}\text{F}$  is:  $^{\circ}\text{C} = 5 \times (^{\circ}\text{F} - 32) \div 9$

Is Zak's headline correct?

Show how you decide.

[2 marks]

~~Handwritten scribbles~~

$$\frac{(95-32) \times 5}{9} = \frac{63 \times 5}{9} = 7 \times 5 = 35^{\circ}\text{C}.$$

$$35 > 32.9.$$

Your answer:

No.

- 1 (d) Zak looks at the weather forecast.

This table shows the highest daily temperatures forecast for the next eight days.

Day	1	2	3	4	5	6	7	8	9	10
Temperature °C	15	19	17	15	15	20	19	16		

- The median of the **ten** temperatures is  $17.5^{\circ}\text{C}$  and
- the **ten** temperatures have two modes.

Use this information to find the forecast temperatures for **Day 9** and **Day 10**.

[2 marks]

15 15 15 16 17 19 19 20

$5^{\text{th}}$  value = 17  $\Rightarrow$   $6^{\text{th}}$  value = 18.

15 15 15 16 17 18 19 19 20

$\Rightarrow$  There must be 3  $19^{\circ}\text{C}$  days

$\Rightarrow$  18,  $19^{\circ}\text{C}$ .

Your answer:

Day 9:  $18^{\circ}\text{C}$

Day 10:  $19^{\circ}\text{C}$ .

- 1 (e) Zak wants to find out how accurate the weather forecast is.

This table shows the last 6 months' forecasts for rain.

It also shows the number of days that it actually rained or stayed dry.

		Actual weather (days)	
		Rain	Dry
Forecast weather (days)	Rain	70	60
	Dry	36	16

Was the forecast more likely to be right when it was for rain or when it was for dry weather?

Explain how you decide.

[3 marks]

$$\frac{70}{70+60} = \frac{70}{130} = \frac{7}{13} \quad (\text{Rain}).$$

$$\frac{16}{36+16} = \frac{16}{52} = \frac{4}{13} \quad (\text{Dry})$$

Rain forecast more likely to be correct.

Your answer:

Rain .

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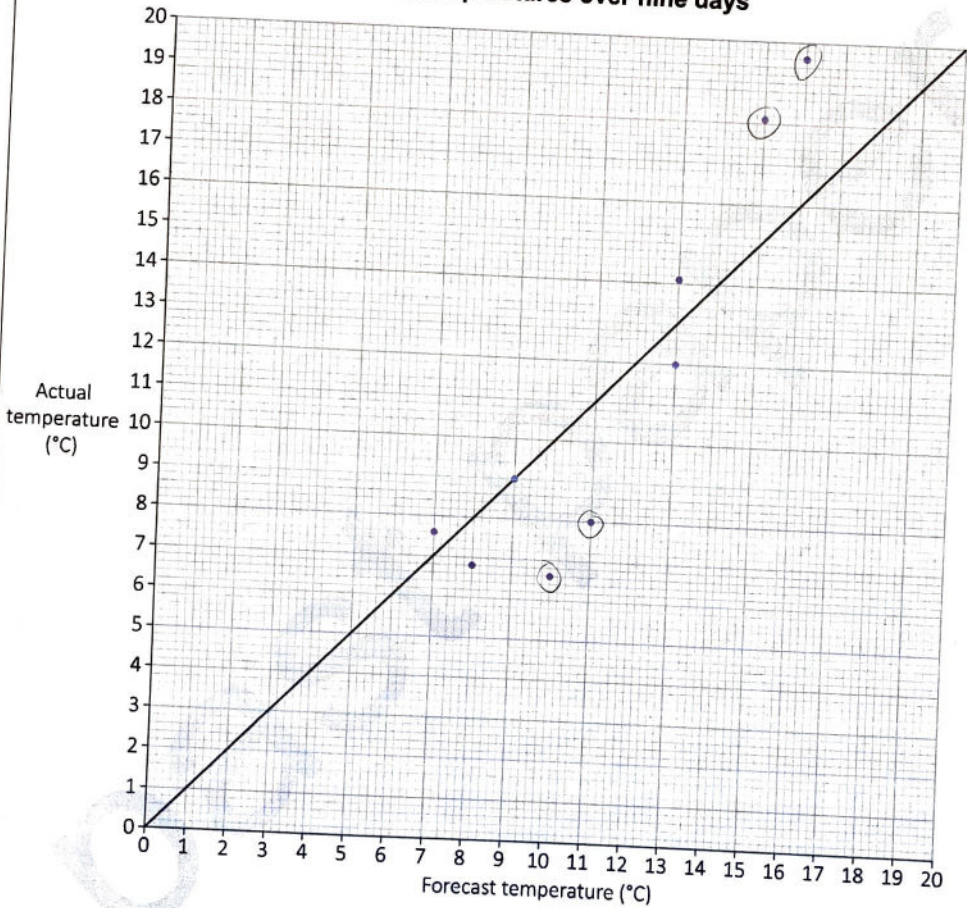


1 (f)

This scatter diagram shows the relationship between forecast temperatures and actual temperatures for the town over nine days.

The line represents the points at which the forecast and actual temperatures are the same.

Relationship between forecast temperatures and actual temperatures over nine days



A forecast is recorded as "accurate" if the actual temperature is within  $2^{\circ}\text{C}$  of the forecast temperature.

Zak writes that,

"The temperature forecast was accurate for less than 70% of the time".

Is Zak correct?

Show how you decide.

[3 marks]

4 are at least  $2^{\circ}\text{C}$  out.

$$\frac{4}{9} \Rightarrow \frac{5}{9} \text{ accuracy} = 55.5\%$$

$$55.6\% < 70\%$$

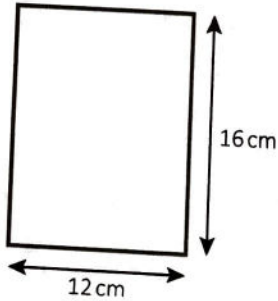
Your answer:

Yes.

- 1 (g) Zak wants to include a map in his article.  
The map must be to scale.

The map shows a part of the country that is 30 km wide and 48 km long.

It must fit into a space that is no more than 12 cm wide and 16 cm long.



Not drawn  
accurately

The map is scaled down to fit into the space.

In the article, what distance, in km, will 1 cm on the map represent? [3 marks]

Handwritten solution:

$$12 \text{ cm} \propto 30 \text{ km}$$

$$30 \text{ km} = 30000 \text{ m} = 3000000 \text{ cm}$$

$$12 = 3000000$$

$$\Rightarrow 1 = 250000$$

$$250000 \text{ cm} = 2500 \text{ m} = 2.5 \text{ km}$$

Alternative calculation:

$$16 \text{ cm} = 48 \text{ km}$$

$$16 = 480000$$

$$\Rightarrow 1 = 300000$$

$$300000 \text{ cm} = 3000 \text{ m} = 3 \text{ km}$$

Your answer:

~~2.5~~ 3 km

[Total marks: 15]

**This is the end of Section A.**

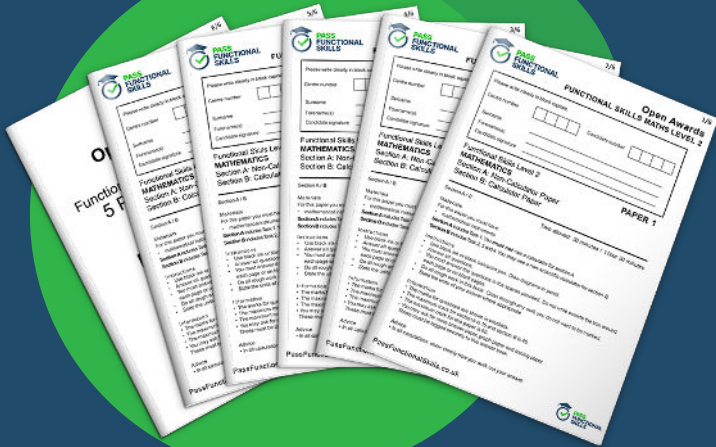
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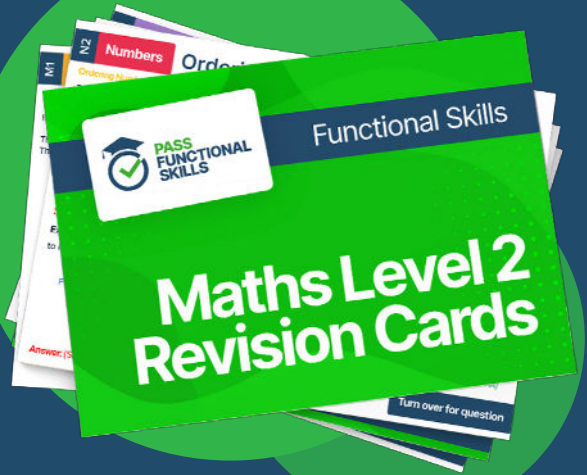
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