



NCFE Level 1 Functional Skills Qualification in Mathematics (603/5055/6)

Paper number: P001253
Section B: Calculator Test



Assessment window: Monday 14 October 2019 – Friday 18 October 2019
Time allowed: 1 hour 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 B contains **Activities 2, 3 and 4**.
- The maximum mark for this section is **45**.
- The marks available for **each** question are shown in brackets.

Resources

You will need a:

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

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 _____

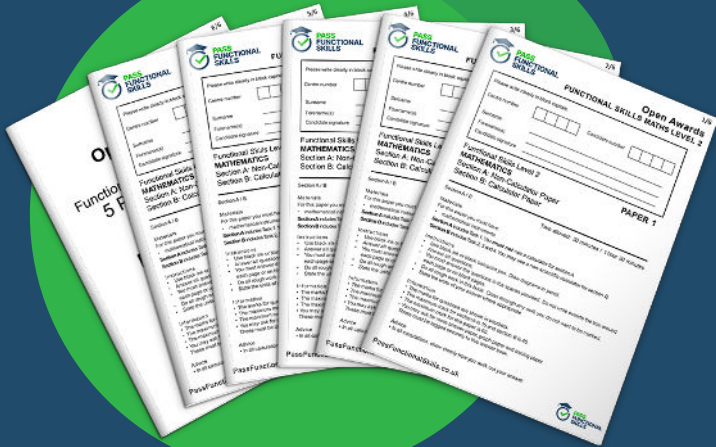
Learner number

Centre number

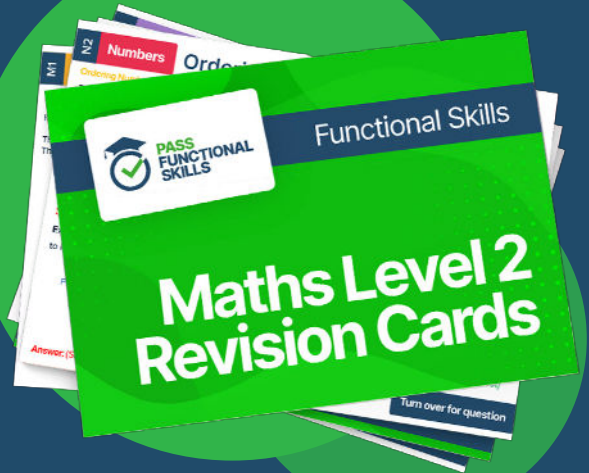
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Activity 2: Community nurse

2 (a) Asmita is a community nurse.

Each week she runs a drop-in clinic where people can have a check-up. People arrive at the clinic and wait until it is their turn to be seen.

At one clinic Asmita asks each person to estimate how many minutes they have had to wait.

The results are shown below.

2	15	18	32	37	8	25	13
31	32	3	5	6	7	4	12
12	14	11	35	28	11	8	12

Use this template to create a grouped frequency table for this data.

[4 marks]

Minutes	Frequency
0-9	8
10-19	9
20-29	2
30-39	5

Please turn over

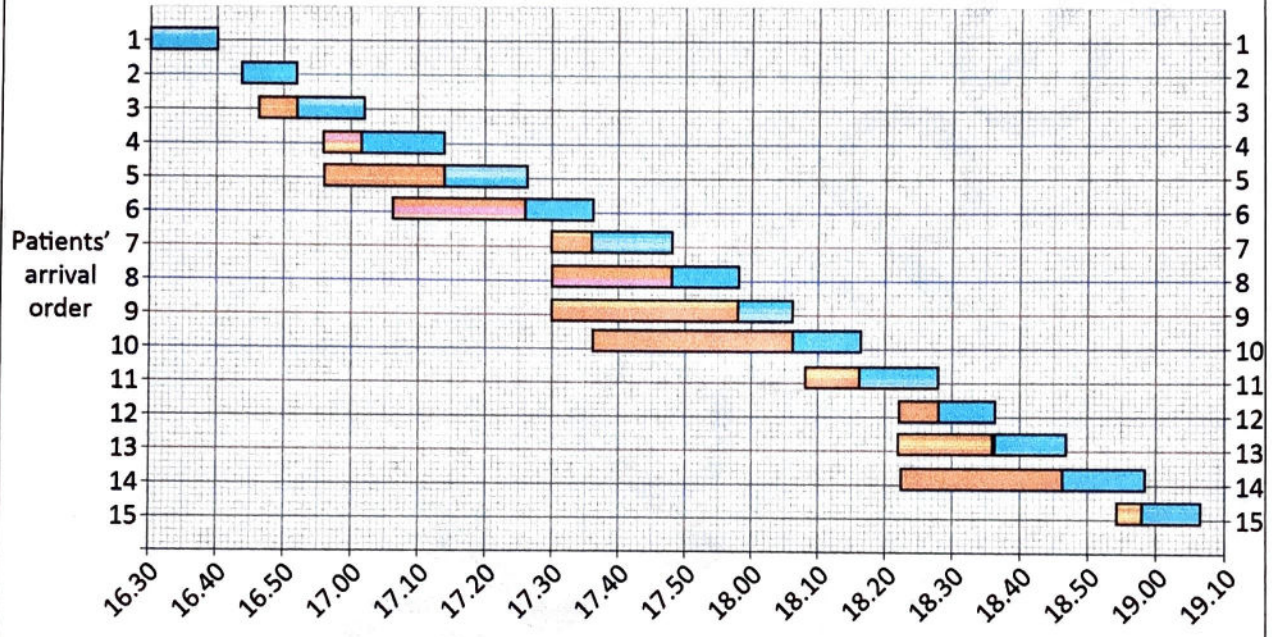
2 (b) At the next clinic, the time that each person arrives is recorded.

Asmita also writes down the times that each person's check-up begins and ends.

She uses this information to draw a graph.

Graph showing waiting times and check up times for clinic

KEY: Number of minutes spent waiting Number of minutes having a check-up
 For example: patient 2 arrived at 16.44 and did not have to wait
 patient 5 arrived at 16.56 and waited 18 minutes until 17.14 before being seen



Asmita says,

"40% of people either waited no time or waited less than 10 minutes before the start of their check-up."

Is Asmita correct?

Show your working.

[3 marks]

15 patients .

$$40\% \text{ of } 15 = 0.4 \times 15 = 6 .$$

But 8 patients waited no time or less than 10 mins .

So Asmita is wrong .

Your answer:

No .

Please turn over

2 (c) Asmita does home visits.

She drives from Skegness to Candlesby to visit one of her patients.

Asmita has a map with scale 1 cm : 2 km

The distance on the map between Skegness and Candlesby is 6.5 cm

Asmita can claim 28p per kilometre for fuel.

Complete the travel expense form below for Asmita's **one-way** journey from Skegness to Candlesby.

[3 marks]

Your answer:

Journey	Distance (km)	Pence per km	Total (£)
Skegness to Candlesby	13	28	

$$6.5 \times 2 = 13 \text{ km}$$

$$13 \times 28 = 364 \text{ p} = \text{£}3.64$$

2 (d) Asmita parks her car on the road in Candlesby.

The car is facing north west.

When she has finished the visit, Asmita turns her car round ready to drive south east.

Through how many degrees has the car turned?

[1 mark]

Your answer:	180°

2 (e) Asmita is concerned about how much fuel she is using.

The manufacturer says that the car has:

- a 52-litre fuel tank
- fuel consumption of 17 km per litre.

Asmita finds that she uses one full tank of fuel to drive 800 km

Is Asmita's fuel consumption as good as the manufacturer claims?

Show how you decide.

[2 marks]

$52 \times 17 = 884 > 800$ <p style="text-align: center;">No.</p>	
Your answer:	No.

Please turn over

2 (f) Asmita puts 40.2 litres of fuel in her car.

The fuel costs 130.1 pence per litre.

She is charged £52.70 for the fuel.

By rounding **litres of fuel** and **cost per litre** to the nearest whole numbers, show how Asmita could check that she has been charged about the right amount.

[2 marks]

$$\begin{aligned}
 40.2 &\approx 40 \\
 130.1 &\approx 130 \\
 40 \times 130 &= 5200\text{p} \\
 &= \text{£}52 \\
 &\approx \text{£}52.70
 \end{aligned}$$

Your answer:

[Total marks: 15]

Activity 3: French flag

- 3 (a)** Tomas is an apprentice gardener.
He is asked to make a flowerbed to look like the French flag.

The flowerbed is a rectangle 225 cm long and 150 cm wide.

Tomas is going to put paving round the perimeter of the flowerbed.

Calculate the perimeter of the flowerbed in metres.

[2 marks]

$$2 \times 225 + 2 \times 150 = 750 \text{ cm} \\ = 7.5 \text{ m}$$

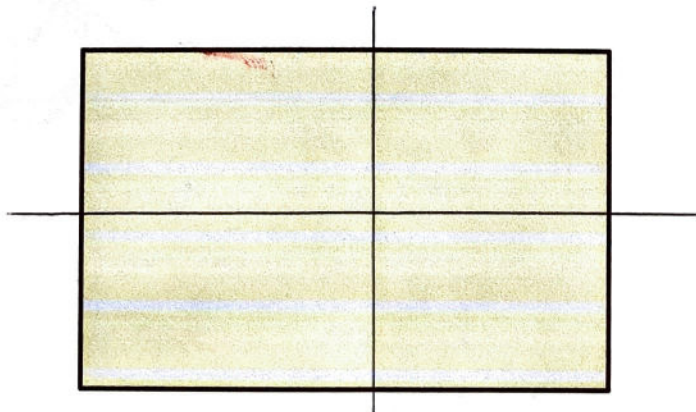
Your answer:

7.5

m

- 3 (b)** Draw in all the lines of symmetry on the flowerbed.

[1 mark]



Please turn over

- 3 (c) Tomas will use red, white and blue flowers to make the flowerbed look like the French flag.



- The flowerbed is a 225 cm by 150 cm rectangle.
- The 3 stripes need to be of equal width.
- Tomas needs one plant for every 12 cm² of flowerbed.

How many red plants will Tomas need?

[4 marks]

$$225 \times 150 = 33750 \text{ cm}^2$$

$$33750 \div 3 = 11250 \text{ cm}^2$$

$$11250 \div 12 = 937.5$$

Tomas needs 938 plants.

Your answer:

938

3 (d) Tomas's manager is ordering plants for a different project.

The table shows the costs per tray for different colours.

Flower colour	Cost per tray
Blue	£42.98
Red	£31.56
White	£33.98
Yellow	£42.99
Pink	£35.75
Purple	£28.50

Calculate the mean cost per tray.

[2 marks]

6 trays

$$\frac{£42.98 + £31.56 + £33.98 + £42.99 + £35.75 + £28.50}{6}$$

$$= £35.96$$

Your answer:

£ 35.96

Please turn over

3 (e) The order is for one tray of each colour.

There are 310 plants in each tray.

Tomas says, "The mean cost per plant is over 10 pence."

Is Tomas correct?

Explain your answer.

[2 marks]

$$310 \times 10 = 3100p$$

$$= \pounds 31 < \pounds 35.96$$

So Tomas is correct.

Your answer:

Yes .

3 (f) Each plant tray is cuboid and measures 30 cm by 50 cm by 4 cm

How many litres of compost would be required to fill one tray?

Use the conversion 1 cm³ = 1 ml.

[2 marks]

$$30 \times 50 \times 4 = 6000 \text{ cm}^3.$$

$$6000 \text{ cm}^3 = 6000 \text{ ml}.$$

$$6000 \div 1000 = 6 \text{ Litres}$$

Your answer:

6 Litres

Please turn over

3 (g) Tomas needs to mix grit and compost in the ratio 1 : 4

He mixes $4\frac{1}{5}$ litres of grit with $16\frac{4}{5}$ litres of compost.

Are these numbers in the correct ratio?

Show how you decide.

[2 marks]

$$4\frac{1}{5} \times 4 = 16\frac{4}{5}$$

Yes .

Your answer:

Yes .

[Total marks: 15]

Activity 4: World hunger

- 4 (a) The world population is about 7726.5 million.

About one in nine people in the world experience extreme hunger.

Use this information to estimate how many millions of people in the world experience extreme hunger.

Give your answer to the nearest million.

[2 marks]

$$7726.5 \times \frac{1}{9} = 849.91$$

850 million

Your answer:

850

million

Please turn over

- 4 (b) When people are starving, aid organisations have to decide quickly who to help first.

One method they use is to measure, in mm, the distance round each person's mid upper arm.

These are the mid upper arm measurements of 20 people.

170	172	158	175	156
154	162	<u>151</u>	172	186
158	173	<u>190</u>	174	169
178	175	157	188	189

What is the range of the measurements?

[1 mark]

$190 - 151 = 39$

Your answer:

39 mm

- 4 (c) What is the probability that one of these people chosen at random has a mid upper arm measurement of less than 160 mm?

Give your answer as a decimal.

[2 marks]

6 less than 160 mm
 out of 20 total.

$$\frac{6}{20} = 0.3$$

Your answer:

0.3

- 4 (d) Another method aid organisations use is to calculate Body Mass Index (BMI).

To find the BMI:

Step 1: calculate height \times height

Step 2: divide weight by your answer to Step 1

Height must be in metres and weight in kilograms.

Calculate the BMI for a person who has:

- weight 64 kg
- height 1.60 m

[3 marks]

$$\text{Step 1: } 1.60 \times 1.60 = 2.56$$
$$\text{Step 2: } 64 \div 2.56 = 25$$

Your answer:

25

Please turn over

4 (e) An aid charity finds that:

20% of the people in village A are malnourished.
15% of the people in village B are malnourished.

Village A has a population of 300
 Village B has a population of 440

Which village has the higher number of people who are malnourished?

Show how you decide.

[2 marks]

$300 \times 0.2 = 60$
 $440 \times 0.15 = 66$
 $66 > 60$
 Village B

Your answer:

B

4 (f) A newspaper reports that the UK wastes one million tons of food each year which could be used to feed hungry people.

Write one million in figures.

[1 mark]

Your answer:

1 000 000

- 4 (g) This information appeared on a website about food wastage.

WHO'S WASTING THE MOST FOOD?



Households
45%



Restaurants
35%



Supermarkets
15%



Other
5%

What fraction of food wastage came from supermarkets?

Give your answer in its lowest terms.

[2 marks]

$$15\% = \frac{15}{100} = \frac{3}{20}$$

Your answer:

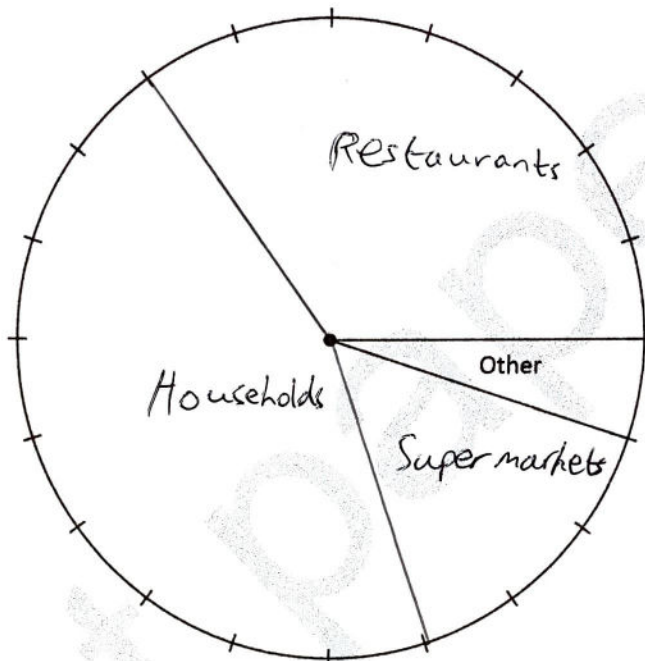
$$\frac{3}{20}$$

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- 4 (h)** Use the information about food wastage given in **4 (g)** to complete the pie chart below.

[2 marks]

Who's wasting the most food?

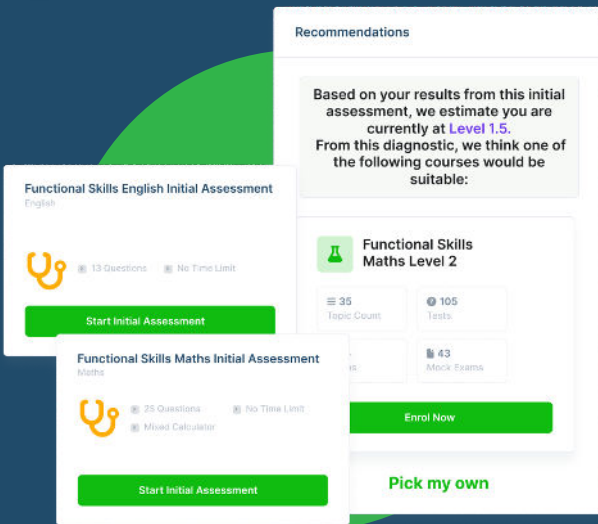


[Total marks: 15]

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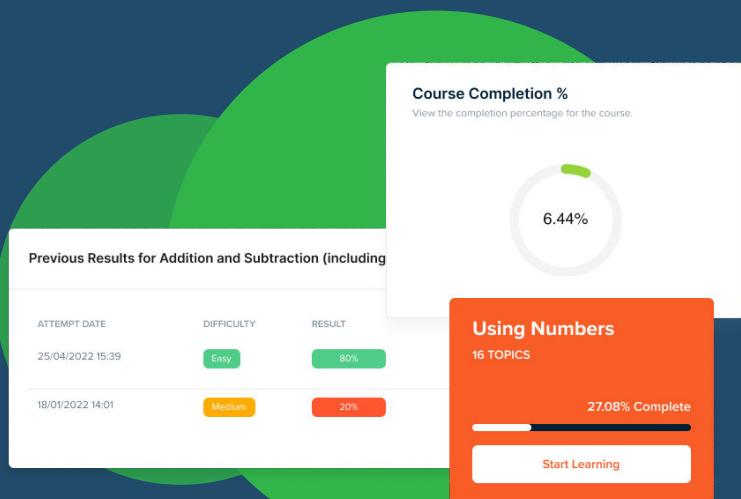
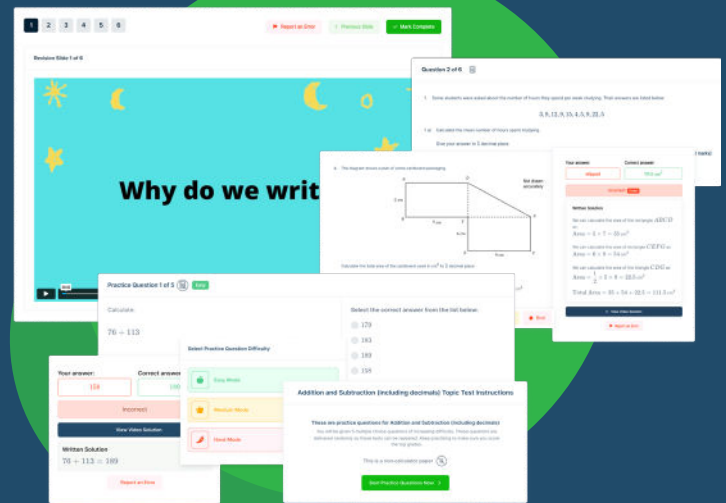


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