Sample Paper 2

malls made easy

ncfe.

Sample Paper: P000293

NCFE Functional Skills Qualification in Mathematics at Level 2 (501/2324/5)

Time Allowed   2 HOURS

You **need** the following to complete this assessment:

- ruler
- calculator

Read each document and activity carefully and attempt to answer **all** activities.

Write your answers in the spaces provided and ensure that your writing is legible.

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

At the end of the assessment hand all documents over to the invigilator as instructed.

DO NOT TURN OVER UNTIL YOU ARE INSTRUCTED TO DO SO BY THE INVIGILATOR.

For Examiner use only:

Activity number	1	2	3	Total
Total Marks awarded				
Total Marks available	**19**	**10**	**11**	**40**

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20 Functional Skills Maths
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FUNCTIONAL SKILLS MATHS LEVEL 2
PAPER 1

Please write clearly in block capitals.

Centre number [ ][ ][ ][ ][ ]   Candidate number [ ][ ][ ][ ]

Surname _____

Forename(s) _____

Candidate signature _____

Functional Skills Level 2
MATHEMATICS
(8362)

Section 1: Non-Calculator Paper

Paper 1   Time allowed: 30 minutes

Materials
For this paper you must have:
• mathematical instruments.
You must not use a calculator.

Instructions
• Use black ink or black ball-point pen. Draw diagrams in pencil.
• Answer all questions.
• You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
• Do all rough work in this book. Cross through any work you do marked.
• State the units of your answer where appropriate.

Information
• The marks for questions are shown in brackets.
• The maximum mark for this paper is 20.
• You may ask for more answer paper, graph paper must be tagged securely to this answer book.

Advice
• In all calculations, show clearly how you work

INCLUDES 20 FULL PAPERS & ANSWERS

MME.

Garden Centre

A garden centre is a place where plants and gardening equipment are sold.

This assessment is about:

- discounts
- sales
- caring for your garden.

Activity 1

Task A

Sanjit and Marta work at Grow It Garden Centre. They have organised a discount week.

Tools that are £20 or less have 15% off.

Tools that are more than £20 have 20% off.

Tool	Full Price
Fork	£25.00
Spade	£26.50
Edger	£19.00

1. What is the discounted price for the fork?

Marks available: 1

Space for your working:

$25 \times 0.8 = £20$

Your answer:

£20

2. What is the discounted price for the edger?

Marks available: 1

Space for your working:

$19 \times 0.85 = £16.15$

Your answer:

£16.15

3. Grow It Garden Centre also sell rakes. A rake has a price of £17 after a discount of 20%.

What was its original price?

Marks available: 2

You must show your working:

$17 \div 0.8 = £21.25$

Your answer:

£21.25

Task B

Grow It Garden Centre have had 8 previous discount weeks.

The numbers of packets of flower seeds sold are shown in the table below.

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
172	190	216	168	267	151	189	223

1.   What was the average (mean) number of packets of flower seeds sold?

Marks available: 3

You must show your working:

$$\text{Mean} = \frac{172 + 190 + 216 + 168 + 267 + 151 + 189 + 223}{8}$$

$$= \frac{1576}{8} = 197$$

Your answer:

197

Show how you can check your answer:

$197 \times 8 = 1576$

2. The discounted price of a packet of flower seeds is always 95p.

What was the total income from packets of flower seeds in the previous 8 discount weeks? Give your answer in **pounds**.

Marks available: 2

You must show your working:

1576 × 0.95 = £1497.20

Your answer:

£1497.20

3. What was the range of the numbers of packets of flower seeds sold?

Marks available: 2

You must show your working:

Range = 267 - 151 = 116

Your answer:

116

Show how you can check your answer:

116 + 151 = 267

8

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Please turn over for the next task.

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MME
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FUNCTIONAL SKILLS MATHS LEVEL 2
PAPER 1

Please write clearly in block capitals.

Centre number ☐☐☐☐☐   Candidate number ☐☐☐☐

Surname _____

Forename(s) _____

Candidate signature _____

Functional Skills Level 2
MATHEMATICS
(8362)

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INCLUDES 20 FULL PAPERS & ANSWERS

MME.

Task C

Sanjit looked at all items sold last month. There were 720 items sold.
The total income from sales was £9720

He looked at the 4 categories: tools, plants, seeds and other.

He drew 2 pie charts.

Chart 1 shows the number of items sold. The angle for plants is 120° and the angle for other is 78°.

Chart 2 shows the total income for each category. The angle for plants is 54° and the angle for other is 206°.

In both charts the angle for tools is a right angle.
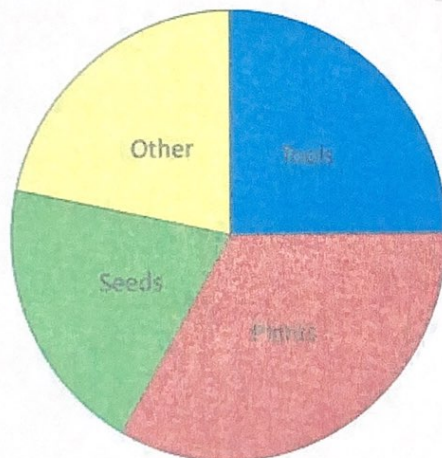
Chart 1: Number of items sold
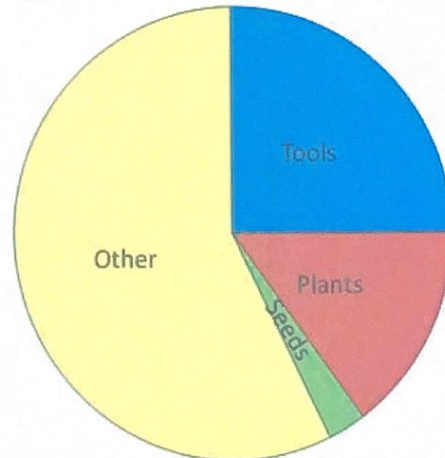
Chart 2: Total income for category

1. According to Chart 1, what **percentage** of items sold were seeds?

Marks available: 3

You must show your working:

$$360 - (90 + 120 + 78) = 72° \text{ for } \text{~~other~~ seeds}$$

$$\frac{72}{360} \times 100 = 20\%$$

Your answer:

$$20\%$$

2. According to Chart 1, what **fraction** of items sold were plants? Show your answer in its **simplest form**.

Marks available: 2

You must show your working:

$$\frac{120}{360} = \frac{1}{3}$$

Your answer:

$$\frac{1}{3}$$

3. According to Chart 2, what was the income from plants last month?

Marks available: 3

You must show your working:

$$\frac{54}{360} \times 100 = 15\% \text{ for plants}$$

$$0.15 \times £9720 = £1458$$

Your answer:

£1458

Total marks available: 19

12

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Please turn over for the next activity.

Activity 2

Task A

Sanjit has a table to display plants, like the one shown.

The table top is 1.4 metres (m) wide and 2 m long.

He has square plant pots in 2 sizes, similar to those below.

The smaller pots are 12 centimetres (cm) wide and the larger pots are 15 cm wide.

Each table will have 2 rows of the smaller pots along one 2 m side.

The rest of the space will be filled with the larger pots. Pots must not hang over the edge of the table.

The table plan shows some pots on a table.

Table Plan
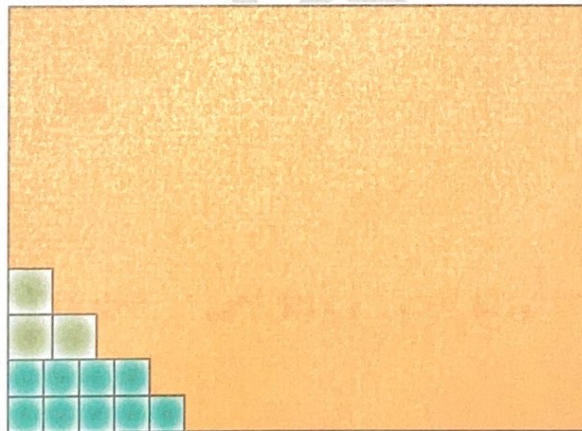
Not to scale

How many of each size of pot will Sanjit need?

Marks available: 4

You must show your working:

$200 \div 12 = 16.66\cdots = 16$ small pots per row

For 2 rows of small pots there will
be $2 \times 16 = 32$ small pots

$140 - (2 \times 12) = 116 \, cm$

$200 \div 15 = 13.33\cdots = 13$ large pots
per row

$116 \div 15 = 7.733\cdots = 7$ large pots
per column

$13 \times 7 = 91$ large pots

Your answer:

32 small pots
91 large pots

15

Task B

On another table Sanjit will display plant pots on sand.

The table base is 2 m by 1.4 m

The sand is put in a frame on top of the base and is made of wood that is 5 cm wide.

The diagram shows the plan of the frame.

2 m

Not to scale

5 cm

1.4 m
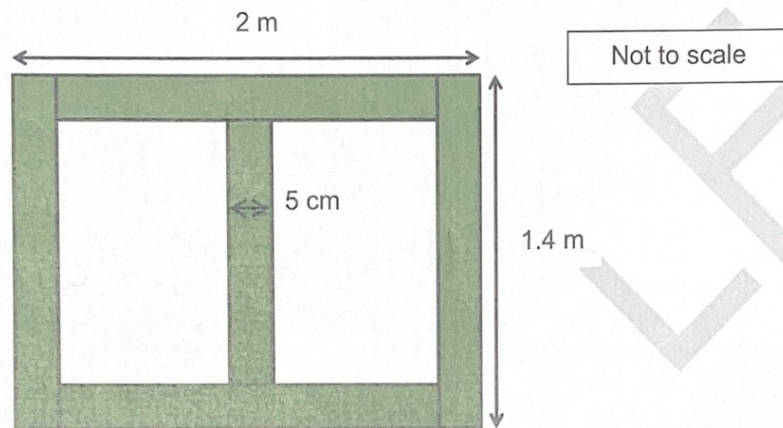
1. What **length** of wood is needed to make the complete frame?

Marks available: 3

You must show your working:

Top and bottom: 2 × (200−5−5) = 380 cm
Left and right: 2×140 = 280 cm
Middle: 140 − 5 − 5 = 130 cm

Total: 380 + 280 + 130 = 790 cm
= 7·9 m

Your answer:

7·9 m

2. The sand needs to be 10 cm deep.

What volume of sand is needed? Give your answer in **cubic centimetres**.

Marks available: 3

You must show your working:

length = 200 - 5 - 5 - 5 = 185cm

Height = 140 - 5 - 5 = 130cm

Volume = 185 × 130 × 10 = 240500 cm³

Your answer:

240500 cm³

Total marks available: 10

Activity 3

Task A

Marta is helping customers in the lawn section. Mr Khan has a circular lawn.

It has a diameter of 6 metres (m)

Where **r** is the radius, for π use 3.14

> area of a circle = πr^2
> circumference of a circle = $2\pi r$

1. What is the area of his lawn?

Marks available: 2

You must show your working:

radius = 6 ÷ 2 = 3 m

Area = πr^2 = 3.14 × 3² = 28.26 m²

Your answer:

28.26 m²

2. Mr Khan wants to edge his circular lawn.

Edging

What is the length of edging needed for Mr Khan's lawn?

Marks available: 2

You must show your working:

Circumference = $2\pi r$
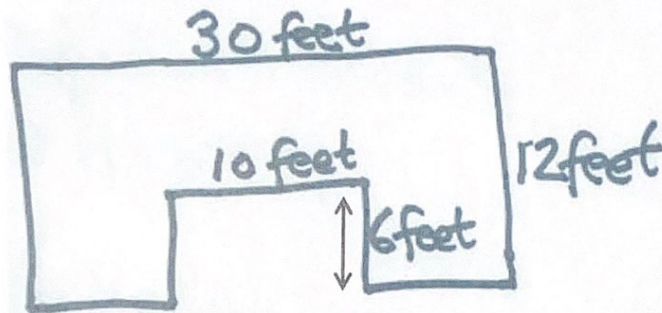= $2 \times 3.14 \times 3$
= $18.84 \, m$

Your answer:

$18.84 \, m$

Task B

Marta is helping two customers to buy lawn feed.

1. Mr Jones has measured his lawn in feet.

He shows Marta a sketch of his lawn.

What is the area of the lawn in **square feet (ft²)**?

Marks available: 3

You must show your working:

Large rectangle Area = 30×12 = 360 ft²

Small rectangle Area = 10×6 = 60 ft²

Total Area = 360 − 60 = 300 ft²

Your answer:

300 ft²

2. Mrs Santaniello wants to buy lawn feed.

Lawn feed is sold in 2 sizes as shown in the table below.

Packet Size	Price
2 kg	£13.00
5 kg	£28.50

35 grams (g) is needed per square metre (m²).

The area of her lawn is 208 m². She wants to apply it just once.

What packet sizes should she buy to get the cheapest price? Explain your answer.

Marks available: 4

You must show your working:

$208 \times 35 = 7280 g = 7.28 kg$

she would need $\frac{7.28}{2} = 3.64 = 4$ small packets

$4 \times £13 = £52.00$

she would need $\frac{7.28}{5} = 1.456 = 2$ large packets

$2 \times £28.50 = £57.00$

Your answer:

She should choose the 2kg packet size.

Total marks available: 11

End of assessment