nocn
CREATING OPPORTUNITIES

**Functional Skills
Mathematics Assessment
Level 2**

Learner name

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Run ID

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Learner signature

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Centre

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Assessment date

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Question	Available Marks	1st Marker	2nd Marker
Task 1 Q1	6		
Q2a	8		
Q2b	1		
Q2c	1		
Q3	8		
Q4a	6		
Q4b	2		
Task 2 Q1	5		
Q2	8		
Q3a	4		
Q3b	1		
Total	**50**		

Instructions to candidates

You may use a calculator.

You **will** need a pen, pencil and ruler.

You **may** need access to a 90° set square, a compass, and a protractor.

Use only blue or black ink. Pencil **must only** be used for drawing.

There are 2 tasks in this assessment.

You must attempt all tasks.

Total marks available: 50

You have **two hours** to finish the assessment.

L2M LB KH 032018

Task 1

Question 1

You have recently set up a small office at a local gardfen centre to offer quotes on patios, sheds, conservatory bases etc.

You have been asked to provide a scale drawing for a quote of a paved patio area around a fish pond.

The total paved area of the patio, excluding the fish pond, must be at least 25 m^2 and can be any shape. The fish pond must be circular with a radius of 2 m.
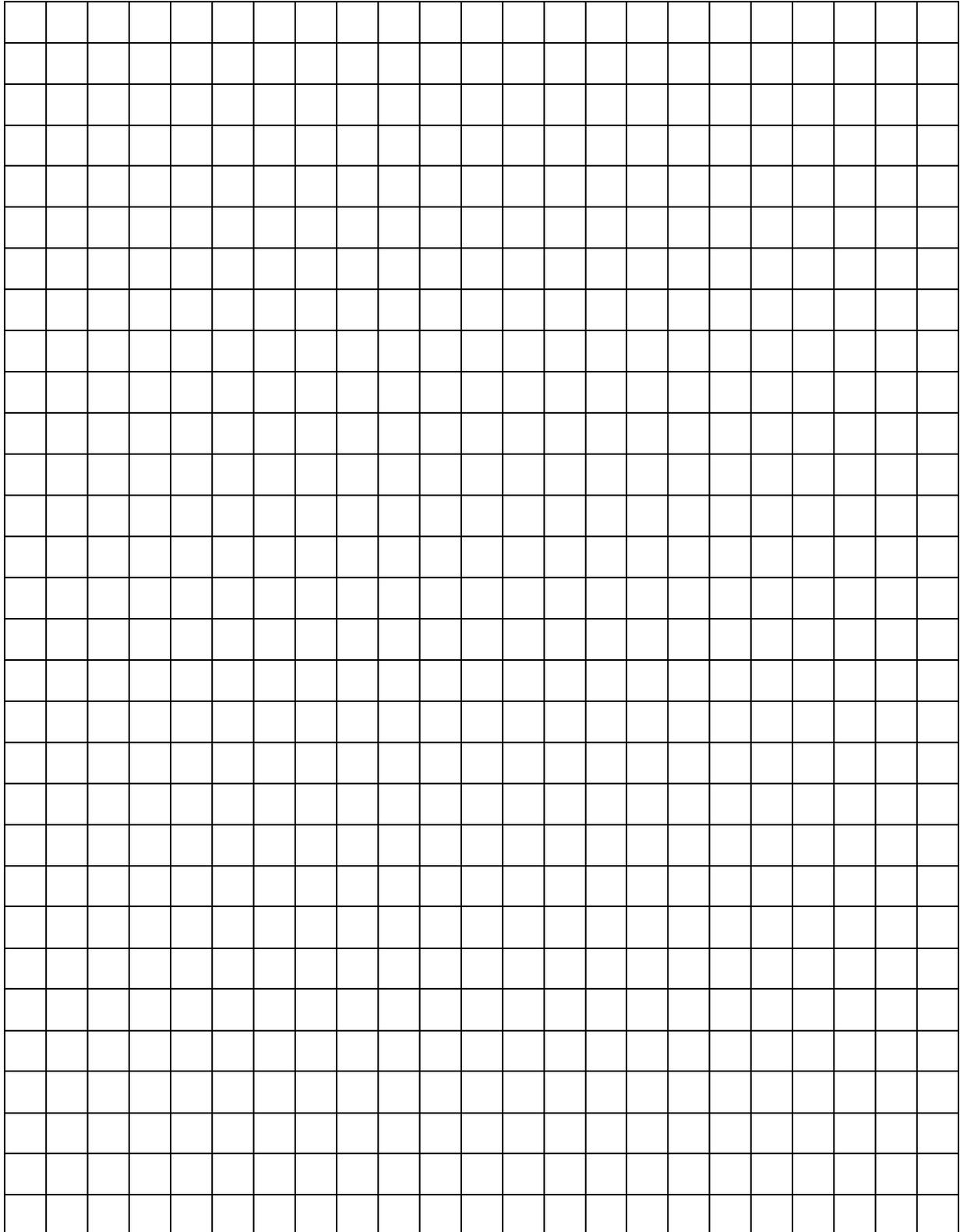
1) Make a scale drawing of the paved patio area and the fish pond, on the next page. Explain how you have made sure that the paved area of the patio is at least 25 m^2.

   Show any workings out and your answer. **(6 marks)**

Use this space for your scale drawing.

Task 1

Question 2

You have been asked to build a rectangular patio for a customer.

She wants it to have an area of at least **25 m²**

In order to make a profit you need to spend no more than £1000 on the paving slabs.

You have three local suppliers of paving slabs to choose from:

Slab U rite	**Stones R Us**	**Pave Tec**
Size : 25 cm x 25 cm	**Size: 50 cm x 100 cm**	**Size: 50 cm x 50 cm**
£2.25 each	£240 for 12 slabs	£9.50 each
Free delivery for orders of £200 or more	15% discount on Wednesdays	$\frac{1}{5}$ off the price of all paving slabs
£30 delivery charge if order less than £200	Free Delivery	£25 delivery charge

2) Can you buy the paving slabs you will need for the job for less than a £1000 budget from any of these local suppliers?

   Show any workings out and your answer. **(8 marks)**

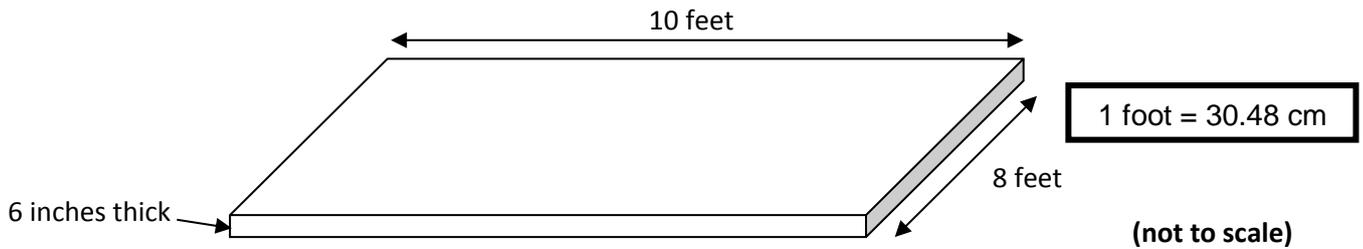**2b)** Explain your answer.   **(1 mark)**

2c) Show how you can check your answer.   **(1 mark)**

Task 1

Question 3

A concrete base needs to be laid for a garden shed.
The diagram shows the dimensions of the concrete base.

10 feet

1 foot = 30.48 cm

8 feet

6 inches thick

(not to scale)

You find this information on the Internet:

CONCRETE MIXES
Amounts required for 1 cubic metre of concrete.
Paving Mix
400 kg Cement
825 kg Sand
1050 kg Aggregate
Foundation Mix
280 kg Cement
825 kg Sand
1050 kg Aggregate
Garden Shed Base mix
320 kg Cement
825 kg Sand
1050 kg Aggregate

25 kg for £6.75	10 kg for £3.19	50 kg for £12.50
Sand £39.99 for 1000 kg		Aggregate £39.99 for 850 kg

Mark thinks it will cost less than £240 for the materials to make the concrete base.

3) Is Mark correct? Explain your answer.

Show any workings out and your answer. **(8 marks)**
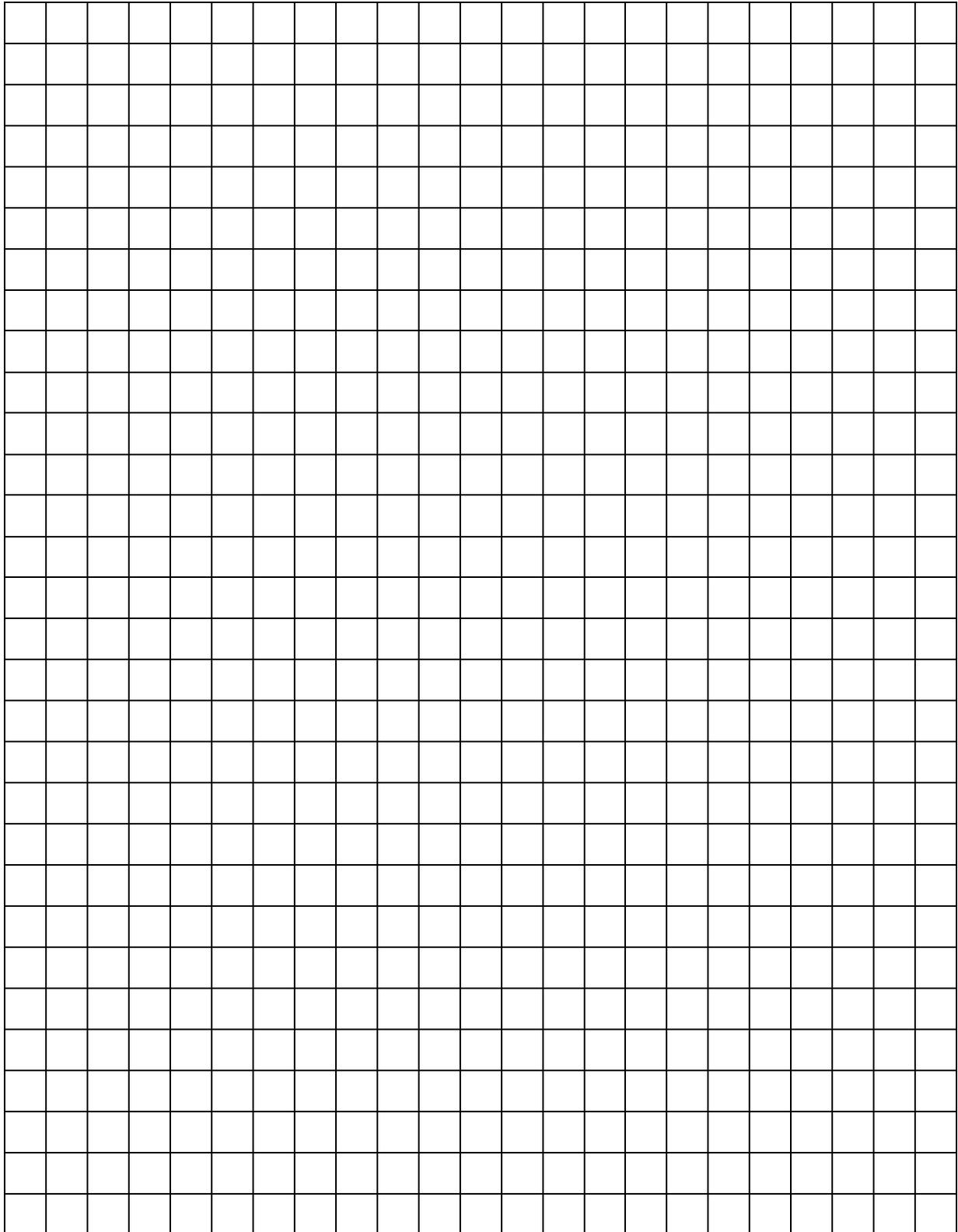
Task 1

Question 4

Mark wants to check if it is cost effective to keep the office at the garden centre he needs to see how much business this has generated. This information was collected over a period of one week. It shows the numbers of customers who visited the garden centre each day and the numbers that requested a quotation for work.

Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Total number of customer visits	350	288	422	556	822	1046	1432
Number of customers who requested a quote	275	254	380	333	529	623	572

4a) On the next page, use the graph paper provided to draw a graph or chart showing the number of customer visits and customers requesting quotes.

Use this space for your drawing.   **(6 marks)**

4b) Use the data to compare purchases with visits.

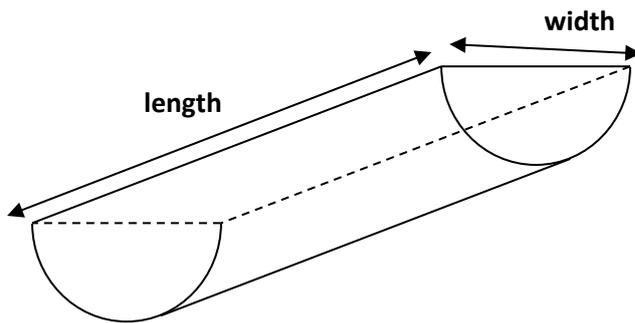| Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Total number of customer visits	350	288	422	556	822	1046	1432
Number of customers who requested a quote	275	254	380	333	529	623	572

Show any workings out and your answer **(2 marks)**

Task 2

Question 1

The manager of the garden centre needs a new storage pond to keep the fish for sale. The new pond needs to hold 250 m³ of water to hold all the fish. You will need to purchase a readymade liner for the pond. There are three sizes of liner available.

You can join different sizes of liners together if required to make up the volume you need.

$$V = \frac{\pi r^2}{2} l$$

Where:
V = volume of polytunnel
π = 3.14
r = radius ($\frac{1}{2}$ of the width of polytunnel)
l = length of polytunnel

Pond Liners		
Size	**Width**	**Length**
Small	4 m	10 m
Medium	6 m	15 m
Large	7 m	20 m

1) Using the above information choose one or more liners to meet the manager's requirement. Explain your reasoning.

   Show your workings out here.   **(5 marks)**

Question 2

Mark needs to decide which company he should buy the new liner from.
He has obtained four different quotes and some customer feedback about each company.

Company	Quoted Price	Customer Feedback 1 is poor, 5 is good
Flexible Butyl Liners	£2,840	5,5,4,5,4,3,3,5,5,4,
Preformed Ponds	£3,200	3,4,4,3,4,4,4,3,2,1
Pond World	£3,850	4,4,4,3,3,2,4,4,3,2
Sun Liners Ltd	£2,500	2,1,3,3,4,3,3,1,5,1

2) Use two different statistical methods to help you decide which company to buy from. Explain your choice.

Show any workings out and your answer. **(8 marks)**

Functional Skills Mathematics
Level 2 Paper – SAMPLE PAPER
Landscape Builder - CONTEXTUALISED
Assessment Task Sheet

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Question 3

Sam wants a block paved area in her garden and has requested a quote. She wants a mixture of brick colours in the paving. Mark said if she purchases the blocks in variety packs it will work out cheaper than selecting colours and amounts. However, she needs to have some idea of how many of each colour she will have.

Sam will need 1800 blocks for her paved area. Each variety pack contains 80 blocks for £30.25.

On a variety pack the label says:

- the probability that blocks will be red is 0.45
- the probability that blocks will be buff is 35%
- the probability that blocks will be grey is $\frac{1}{5}$

3a) Work out the cost of the number of variety packs Sam will need for her block paving. Identify how many of the blocks will be red and how many will be buff.

Show any workings out and your answer. **(4 marks)**

3b) Show how you can check your answer. **(1 mark)**

END OF ASSESSMENT

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