

Functional Skills
 Mathematics Assessment
 Level 2

Learner name

Run ID

Learner signature

Centre

Assessment date

Questions	Available marks	1st Marker	2nd Marker
Task 1 Q1	10		
Q2	6		
Q3a	6		
Q3b	1		
Q4	5		
Task 2 Q1a	6		
Q1b	1		
Q2	9		
Q3a	5		
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.



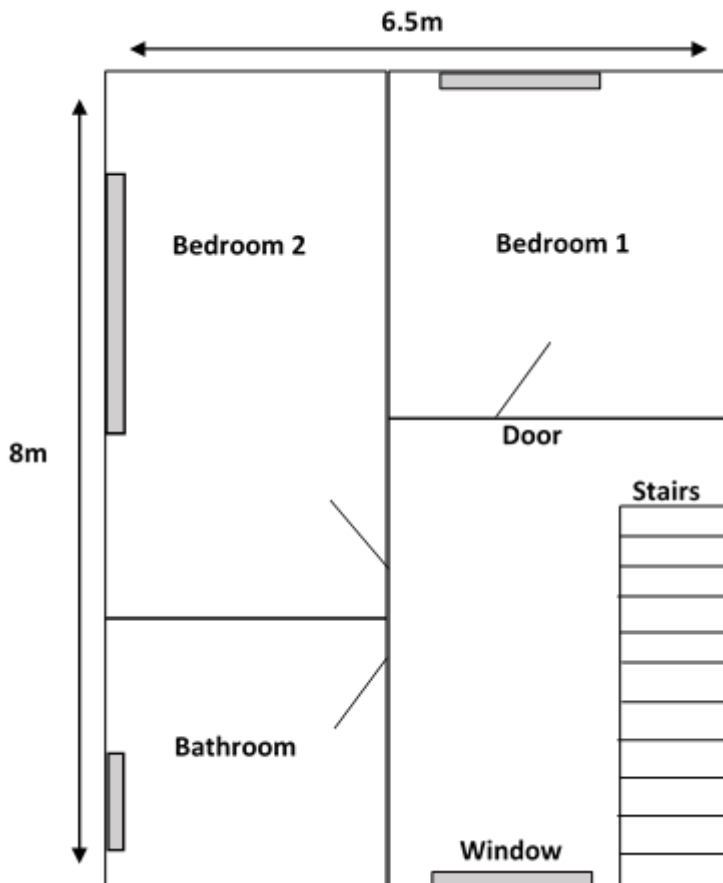
L2M FITT 032018

Task 1

Question 1

You are fitting a bathroom in a new build and need to provide a plan of the bathroom to the buyers.

This is a plan of the upstairs of the property.



Bedroom 1 = 3.5m square
Bedroom 2 = 5m wide 5m long
Floor to ceiling height = 2.4m
Diagram not to scale
1 inch = 2.54cm

You need to add the following items to the scale plan for the bathroom:

1 bath 1700mm by 600mm (can be free standing)

1 sink 24 inches long by 16 inches wide

1 toilet 450 mm by 300mm and needs to be on an outside wall

1 shower cubicle 0.78m by 0.78m

Window is 0.75m wide

Door is 0.8m wide

- 1) Use the graph paper on the following page to draw a scale drawing of the bathroom. Label your drawing clearly. Show any workings out on the next page

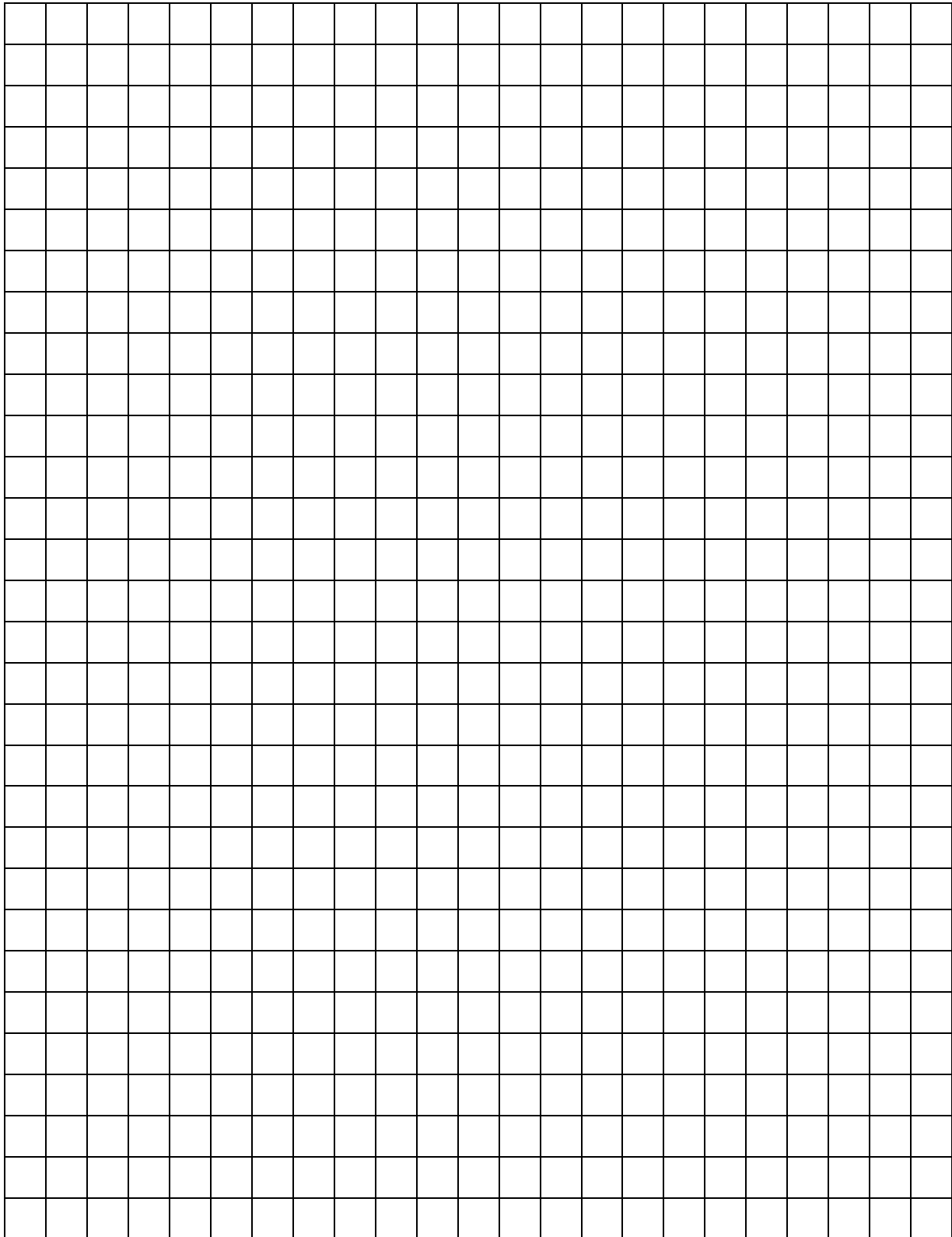
Show any workings out.

(2 marks)



Use this space for your drawing.

(8 marks)



Question 2

The bathroom needs to have an extractor fan fitted. To check that the correct one is fitted you need to calculate the air exchange. The room dimensions are 300cm long by 300cm wide by 210 cm high.

You use the following formula:

$$AE = \frac{AC}{(L \times W \times H)}$$

Where:

AC = Air capacity

W = Width in meters

L = Length in meters

H = Height in meters

AE = Air exchange

They want to have a minimum number of 4 air exchanges. You have a choice of 3 possible extractor fans.

Company	Air capacity m ³ /h	Cost
Hydro-exchange	85	£234.75
All Extractors	63	£325.00
Turbo Fan	72	£262.00

2) Which extractor fan should you choose? Explain your choice

Show your workings out and your answer.

(6 marks)

Question 3

The floor will need to be screeded before the tiles can be laid. The room is 3 metres square and the screed will need to be a minimum of 1cm thick but no thicker than 2cm. You have a budget of £35 for the screed.

1kg of screed will fill a space of 0.006 cubic metres

The screed is sold in two sizes



£2.75



£10.50

3a) Can you screed the floor to the correct depth within the budget? Justify your answer.

Show your workings out and your answer.

(6 marks)

3b) Show a check of your answer.

(1 mark)

Question 4

The buyers have asked about having an anti-slip floor fitted in the bathroom. The buyers are given the following information by the house builders in order to help with their decision.

Source 1:

Floors Pendulum test value	Slip Potential	Number of incidents	Please note: a moderate reading is NOT OK . Note that it indicates caution and that slipping is possible.
0-24	High	129000	
25-35	Moderate	98235	
36+	Low		
75+	Extremely low	8364	

897,520 falls due to wet floors occurred in UK bathrooms in 2016/2017

Source 2: (information on a website)

- 90% of floor slip accidents in the UK occur on wet floors, most usually on relatively smooth / shiny floors
- 35% occurred on a pendulum tested floor 1/4 of which were on low slip potential
- 1/5 of slips occurred on floors with a rating of 27

4) What percentage of falls occurred on low slip potential floors? Would you advise installing Low Slip Potential flooring? Explain the reason for your answer.

Show your workings out and your answers

(5 marks)

Task 2

Question 1

The payment for fitting the bathroom needs to be split amongst the trade people carrying out the work.

£4,600 is the agreed charge for the bathroom.

The plumber will receive 24% of the total. The electrician will receive $\frac{1}{5}$ of the total.

The remainder of the money will be split between the bathroom fitters and the plasterers at a ratio of 2:3.

1a) How much money will the plasterers receive? Explain your answer.

Show your workings out and your answer.

(6 marks)

1b) Show how you could check your answer.

(1 mark)

Question 2

You need to have a 12-month turnover of £400,000 to keep making a profit. You need to check turnover for the last 6 months to see if you are on target or if need to increase how much you charge if you have not made £200,000.

Current income from bathroom fitting is:

- £4600 per bathroom
- 3 days to complete a bathroom
- Working 5 days a week

You know that if you have made a loss you will need to increase the cost to recoup losses.

2) What percentage profit/loss have you made in the last 6 months? Do you need to increase the cost of the bathrooms for the next 6 months? Explain your answer

Show your workings out and your answer.

(9 marks)

Question 3

Jane can get a discount with her local building supplier. The terms of the discount scheme are:

- 10% discount if average spend is £1500 per month
- 7.5% discount if average spend is £1200 per month
- 5% discount if average spend is £1000 per month

Calculations are based on the last 6 months purchases and the scheme would start in September.

Average costs are calculated before VAT. VAT is charged at 20%.

This is Jane's purchase record since using this supplier excluding VAT.

Feb	Mar	April	May	June	July	Aug
875.43	522.47	2015	849.16	1025.36	986.75	752.14

After calculation the supplier tells Jane she can use the 5% discount card from September. Jane thinks this is incorrect and she is entitled to the 7.5% discount.

3a) Use statistical methods to agree or disagree with Jane. Should she be able to use the 12% discount card? Explain your answer.

Show all your workings out and your answer.

(5 marks)

3b) Would Jane have been able to get the discount of 10% if all her purchases were included. Explain why

Show your workings out and your answer.

(1 mark)

END OF ASSESSMENT

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