3748-620 SAMPLE 1
Level 2 Functional Skills Mathematics

These materials relate to the assessments that will be in use from Autumn 2016

Candidate Name (First, Middle, Last)

Candidate enrolment number

DOB (DDMMYYYY)

Candidate signature

Assessment date (DDMMYYYY)

Centre number

Total marks	
Section	**Mark**
Total	

Length of assessment:
Untimed

You should have the following for this assessment

- a pen with black or blue ink
- a pencil and eraser for graph/diagram work
- a 30cm ruler
- graph paper
- a calculator
- a protractor.

General instructions

- There are **3** tasks to complete.
- Each task is worth 25 marks.
- You should spend an equal amount of time on each task.
- Read through each task carefully.
- The maximum marks available are shown for each question.
- Show your working out, you may get marks for it.
- Check your calculations.
- You may use a calculator.
- You may use a dictionary.

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Task 1 – Team building day

There are 25 marks for this task.
You should check all your work as you go along.

Introduction
This task is about organising a team building day for employees from a local company.

The day will take place at an outdoor activity centre.

To complete this task you will need to

- choose teams
- select activities
- draw a timetable
- calculate costs.

You will need to check your calculations and review your work.

1A

You need to put the employees into two teams, Team A and Team B.

Each team must

- have a similar **combined** fitness level score
- include at least one manager.

Decide who will be in each team. Complete the table.
Show the combined fitness level score for each team.

Employees			Skills	
Employee name	**Gender**	**Employee department**	**Fitness level score 1 (unfit) - 5 (very fit)**	**Team A or Team B?**
Abbie	F	Sales manager	2	
Frank	M	Sales	2	
Isaac	M	Sales	5	
Nita	F	Administration	2	
Alvin	M	Office manager	3	
Lora	F	Administration	5	
Pete	M	Production manager	2	
Prita	F	Production	3	
Simon	M	Production	4	
Ash	M	Design	5	

Show your working

Combined fitness level score Team A _____

Combined fitness level score Team B _____

(4 marks)

1B

How did you decide who to put in each team?

Give **two** reasons for your decisions.

(2 marks)

1C

You now need to select activities to fill the day and make a timetable.
You receive the following email from your manager.

Hello

Please put a timetable of the selected activities together for the team building day.

Make sure we have a 9am start and a 5pm finish.

We will need a 30 minute introduction to start the day, an hour for lunch from 1pm and a half hour prize giving session before we finish.

Both teams will do the same activities at the same time.

Everyone must do Archery straight after lunch.

Thanks

Activity	Time needed (minutes)
Archery	60
Assault course	90
Canoeing	90
Climbing wall	90
Go karts	90
Mountain biking	60
Paintball	60
Quad biking	75
Tree climbing	90
Wind surfing	75
Zip wire	45

Make a timetable for the day.

(8 marks)

1D

You need to work out how much the team building day will cost the company.
Remember there are 10 employees.

Option 1	Option 2
£38.70 for **each** employee for a whole day of activities including free lunch. 15% discount when booking for more than 8 employees.	£9.65 for **each** employee for **each** activity. Plus £6.95 for lunch for **each** employee.

Work out how much each option would cost.

Show your working

Cost of Option 1 **£**_____

Cost of Option 2 **£**_____

Which option will you recommend?

Explain your decision. Make one comment.

I would recommend (Tick one)	**Option 1**	**Option 2**

Explanation

(6 marks)

1E

Check one of your calculations in **1D**.
Use a different method to the one you used originally.

Write your check here

(2 marks)

1F

You were asked to choose teams, suitable activities and how much to charge for the team building day.

You need to think about **how well** you did the task.

Make **three** comments.

Think about

- any other information that you would have liked
- how sensible your answers were
- how well your methods worked
- anything you found difficult
- things you might do differently if you had to tackle a similar problem.

Comment 1

Comment 2

Comment 3

(3 marks)

Task 2 – Food Vans

There are 25 marks for this task.
You should check all your work as you go along.

Introduction
This task is about setting up a 'Food Zone' – an area to sell food and drink – at a new venue for a music festival.

The Food Zone will have space for vans to park and sell their food and drink.
There will also be a space for seating.

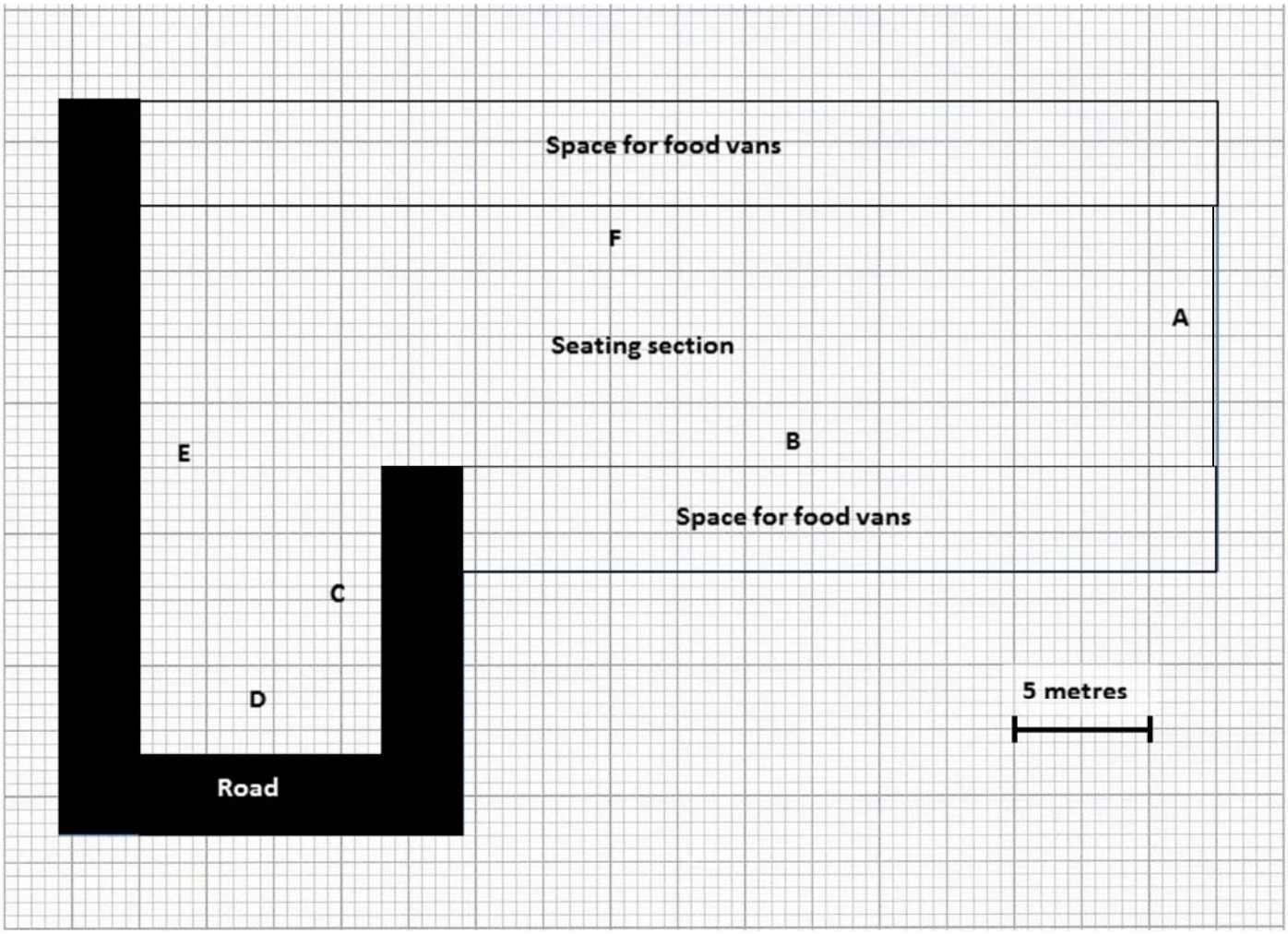
To complete this task you will need to work out

- the area of the seating sections
- if the new seating section is bigger than the old one
- how many food vans will fit.

You will need to check your calculations.

2A

Here is a scale plan of the Food Zone and road for access.



Work out the dimensions of the **seating section**.
Complete the table.

Show your working

Side	Length (metres)
A	
B	31
C	
D	
E	
F	40

(4 marks)

2B

You need to show a check of how you used the scale in **2A**.
Explain how you know that one of your answers is correct.

My check is for length (Tick one)	**A**	**C**	**D**	**E**

Explanation

(2 marks)

2C

Look at the diagram in **2A**.
Use your answers to **2A** to work out the area of the seating section.

Show your working

Area of seating section_____ m^2

(5 marks)

2D

Last year, the area of the seating section was too small.
The organisers claim that the area of the seating section at the new venue is over 50% larger than the seating section at the old venue.

The seating section at the old venue was **320m²**

Use your answer from **2C** to compare the size of the seating sections at the two venues.
State whether the organisers' claim is true.
Explain your decision.

Show your working

Is the statement true? (Tick one)	**Yes**	**No**

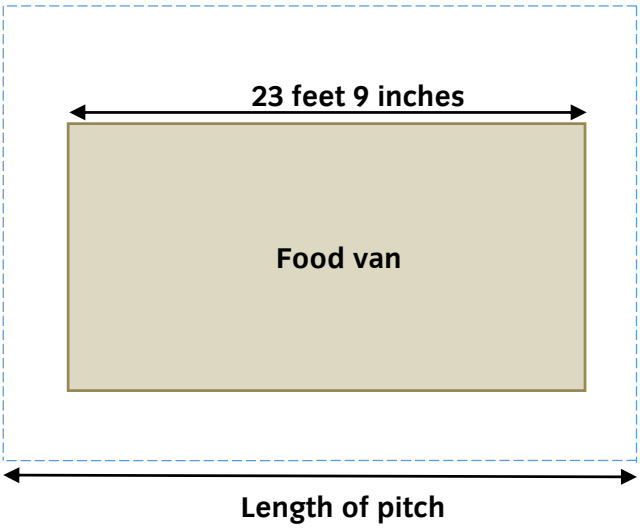
Explanation

(5 marks)

Question 2E

Food vans will go along the sides of the Food Zone in spaces called pitches.
Each pitch needs to be longer than a food van as shown in the diagram.

Not to scale



$$P = \frac{F}{39.37} + 1.5$$

Where P = minimum length of pitch in **metres**
F = length of food van in **inches**

1 foot = 12 inches

You need to work out the length of a pitch.
Use the formula above to work out the minimum length of the pitch.
Round your answer up to the next whole metre.

Show your working

Minimum length of pitch _____ **m**

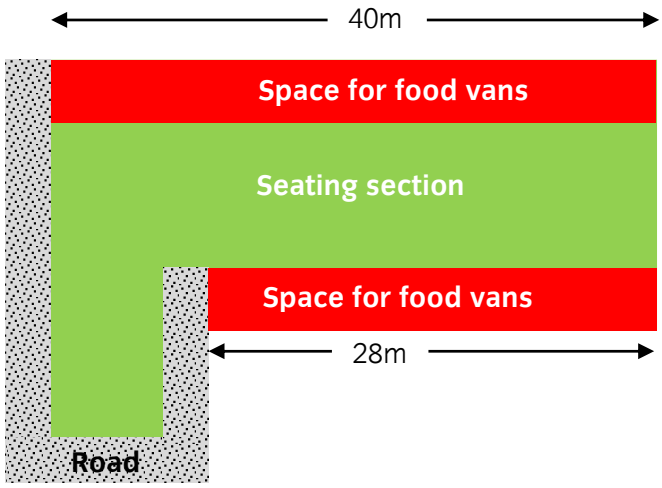
Rounded up length to use for pitch _____ **m**

(5 marks)

2F

You need to find out how many food vans will fit.

Sketch of food zone



The food vans will fit by the seating section.

Work out the **maximum** number of pitches that will fit in the two space.

Show your working

Maximum number of pitches _____

(4 marks)

Task 3 – Hand wash

There are 25 marks for this task.
You should check all your work as you go along.

Introduction
This task is about marketing research for a new hand wash product.

To complete this task you will need to

- look at some survey results
- present your findings
- review customers' opinions
- make decisions about money-off vouchers.

You will need to check your calculations.

3A

A cosmetics company carries out a survey.
Volunteers try the hand wash and give it a score on a scale of 1 to 10 for the following three categories:

- design of bottle
- fragrance
- hands feel clean.

Work out a suitable average for the scores for the new hand wash.

Volunteer	Score for each survey question 1 = strongly disagree 10 = strongly agree		
	I like the design of the bottle	I like the fragrance (smell)	I like how clean my hands feel
A	4	6	7
B	3	7	9
C	6	6	8
D	3	8	6
E	6	8	9
F	3	6	7
G	4	10	6
H	3	2	6
I	4	9	9
J	6	6	10
K	6	10	9
L	6	6	10

Which average will you use? (Tick one)	Mean	Median	Mode

Show your working

Design of bottle _____

Fragrance _____

Hands feel clean _____

(4 marks)

3B

Explain why the average you used is the most suitable.

(1 mark)

3C

Find the range in scores for the new hand wash for

- design of bottle
- fragrance
- hands feel clean.

Volunteer	Score for each survey question 1 = strongly disagree 10 = strongly agree		
	I like the design of the bottle	I like the fragrance (smell)	I like how clean my hands feel
A	4	6	7
B	3	7	9
C	6	6	8
D	3	8	6
E	6	8	9
F	3	6	7
G	4	10	6
H	3	2	6
I	4	9	9
J	6	6	10
K	6	10	9
L	6	6	10

Show your working

Design of bottle _____

Fragrance _____

Hands feel clean _____

(3 marks)

3D

Check one of your calculations in **3C.**

Use a **different** method to the one you used originally.

Write your check here

(2 marks)

3E

Draw a suitable chart to compare the **average** scores for the new hand wash from **3A** for

- design of bottle
- fragrance
- hands feel clean.

(5 marks)

3F

Look at the **averages** and **ranges** that you worked out in **3A** and **Question 3C**.
What do they show about the volunteers' opinions of the **fragrance**?

Make one comment using the average and one comment using the range.

Comment about the fragrance using the average

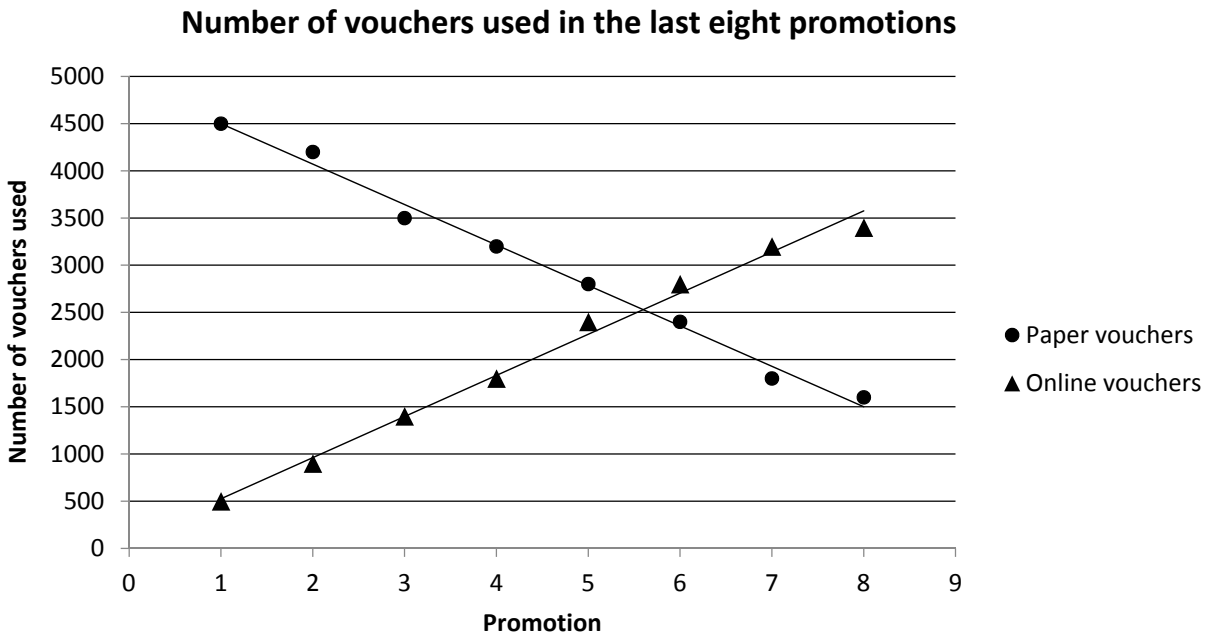
Comment about the fragrance using the range

(2 marks)

3G

The cosmetics company that produces the hand wash uses money-off vouchers to promote new products.

This graph shows how many vouchers customers used in the last 8 promotions.
Promotion 9 will be for the new hand wash.



Extend the trend lines (lines of best fit) for the different types of voucher.

Use your trend lines (lines of best fit) to predict how many paper vouchers will be used and how many online vouchers will be used in Promotion 9.

Paper vouchers ☐

Online vouchers ☐

(3 marks)

3H

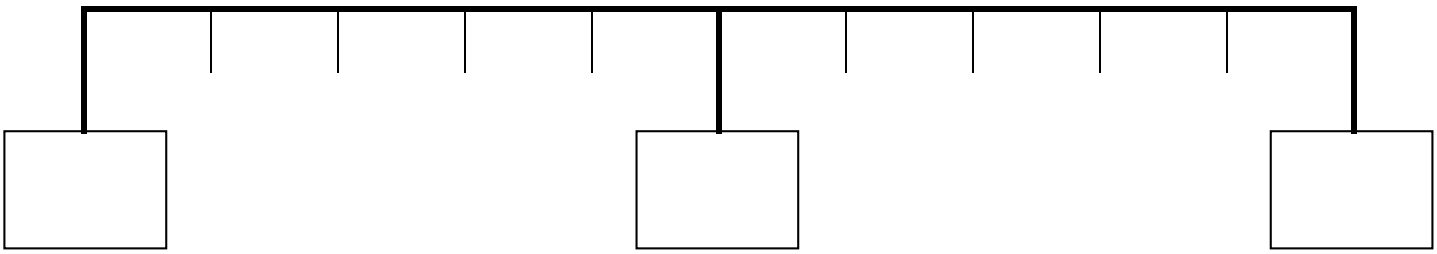
The company sends out 100 000 paper vouchers for every campaign.

Work out the probability that a person who receives a paper voucher for Promotion 9 will use it.

Show your working

Probability _____

Complete the probability scale below and mark it with an X to show your answer.



(4 marks)

3I

The company spends the same amount of money to pay for vouchers for each promotion. Half of the money is spent on paper vouchers and the other half on online vouchers.

Use your results and the graph to decide whether the company should continue to spend money on paper vouchers for Promotion 9.

Explain your answer.

Should the company continue to spend money on paper vouchers? (Tick one)	**Yes**	**No**

Explanation

(1 mark)

End of Assessment.

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