

Level 2 Certificate in Essential Skills Application of Number



www.cityandguilds.com

September 2016 Version 1

Sample Paper 1 Question Paper

Length of assessment – 1 hour 30 minutes
Total marks available – 50 marks

Candidate Name (First, Middle, Last)

Candidate enrolment number

DOB (DDMMYYYY)

Candidate signature

Assessment date (DDMMYYYY)

Centre number

You should have the following for this assessment

- a pen with black or blue ink
- a pencil and eraser for graph work
- a 30cm ruler.
- You may use a calculator.
- You may use a protractor.
- You may use a dictionary.

General instructions

- There are **50** marks available in this assessment.
- There are **2** tasks to complete. You must answer all of the questions.
- Each task is worth 25 marks.
- You should spend an equal amount of time on each task.
- Read through each task carefully.
- Show your working out. You may get marks for it.
- Check your calculations.
- Remember to put units on your answers.
- Write all working out and answers in this booklet.
- There are additional pages at the back of this booklet if you run out of space.

Task 1 Theatre

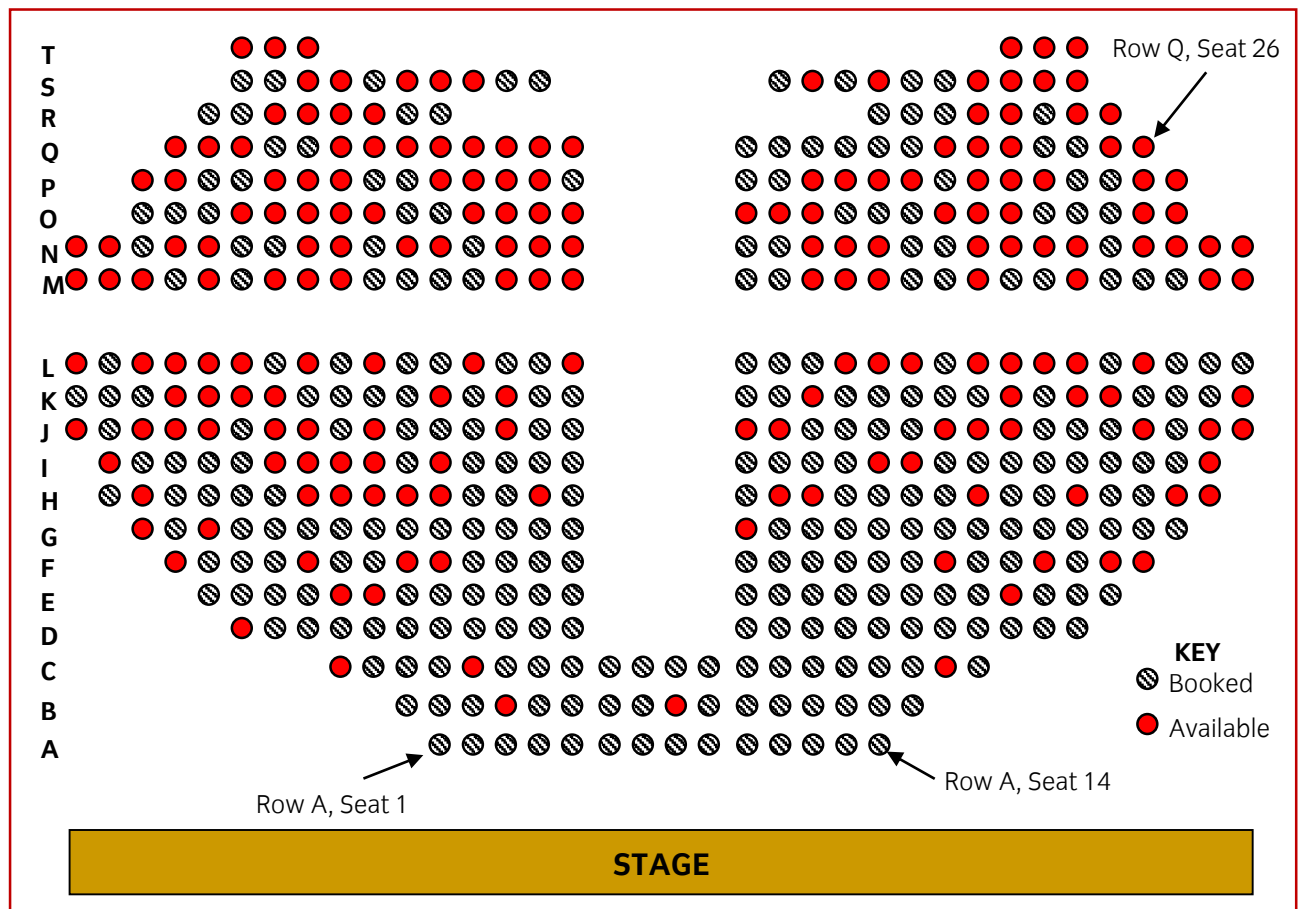
There are **25** marks available in this task.
You should check all your work as you go along.

Introduction

This task is about a theatre.

1A

The picture below shows the seating plan for the theatre.



Is Seat 5 in Row G available or already booked? Explain your answer.

Seat 5 in Row G is **available** **booked**
(Tick one box)

Explanation

(1 mark)

1B

A customer wants to buy two seats together as close to the stage as possible.

Which two seats are the most suitable?

Seats _____ and _____

(1 mark)

1C

The table below shows the price list for the show.

Ticket type	Seats				
	Rows A – C (ie A, B and C)	Rows D – H	Rows I – L	Rows M – Q	Rows R – T
Adult	£20.00 per person	£17.00 per person	£15.00 per person	£12.00 per person	£10.00 per person
Child (< 12 years)	15% discount (off the adult price)				
Family (2 adults + 2 children)	£70.00	£65.00	£60.00	£55.00	£50.00
Pensioner	£10.00				

A family of 2 adults and 2 children, aged 6 and 11, want to sit in the **Rows I – L seats**.

Should the family buy individual tickets for each person or buy a family ticket?

Compare the costs and explain your answer.

Show your working		
<p>The family should buy (Tick one box)</p>	<input type="checkbox"/> individual tickets	<input type="checkbox"/> a family ticket
<p>Explanation</p>		

(5 marks)

Essential Skills Application of Number L2 Sample Paper 1

1D

The show lasts 105 minutes. There will also be an interval of 20 minutes in the middle.

The show will start at 1930. What time will it finish?

Give your answer in the 12-hour clock format and make sure you put the units on your answer.

Show your working

Finish time _____

(2 marks)

1E

The theatre company wants to build a water feature outside the theatre.

The picture below shows the fountain they would like.



The builder wants to draw an accurate scale plan of the fountain using a scale of 1 : 20

How long **in centimetres** will the diameter of the fountain be on the scale plan?

Show your working

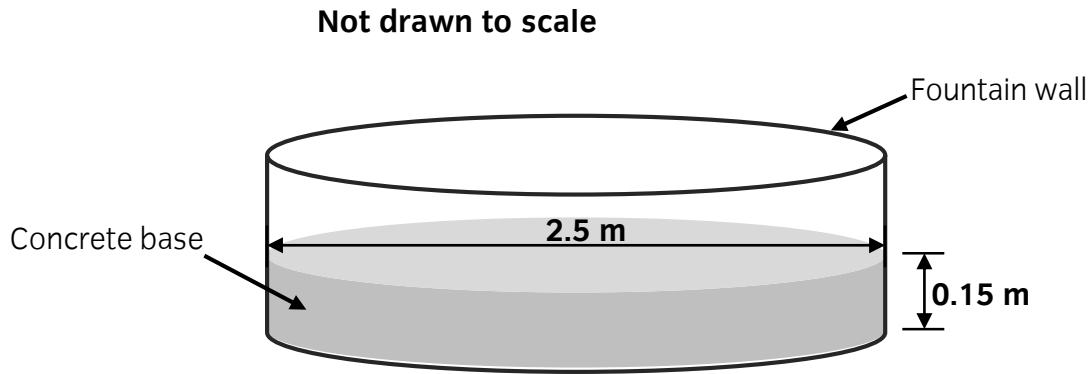
Length of diameter on scale plan _____ **cm**

(3 marks)

1F

The builder must work out the volume of concrete that he will need to make the base of the fountain.

The picture below shows the dimensions of this concrete base.



Work out the total volume of concrete the builder needs to make the base.

Make sure you put the units on your answer.

Use the formula $V = \pi r^2 h$

Where V = volume of the concrete base
 r = radius of the concrete base
 h = height of the concrete base

Use $\pi = 3.14$

Show your working




Total volume of concrete needed _____

(4 marks)

1G

To make the concrete for the fountain and a seating area, the builder will mix cement, sand and stone together with water.

The table below shows how much cement : sand : stone he would mix with water to make **0.3m³ of concrete**.

Cement	Sand	Stone	mixed with water makes	Concrete
				
2 bags (1 = 50kg)	3 wheelbarrows	3 wheelbarrows		0.3m³

The builder works out he needs a total of **1.8m³ of concrete**.

How much cement, sand and stone will he need to mix with water to make **1.8m³ of concrete?**

Show your working

Cement _____ bags

Sand _____ wheelbarrows

Stone _____ wheelbarrows

(4 marks)

1H

The builder's company guidelines state that he should **not** lift more than 120 pounds on his own.

1 kilogram = 2.2 pounds

Can the builder lift a bag of cement on his own? Explain your answer.

Show your working

Can the builder lift a bag of cement on his own?

(Tick one box)

Yes
<input type="checkbox"/>

No
<input type="checkbox"/>

Explanation

(2 marks)

11

The table below shows the number of times the builder has finished similar building projects on time.

Projects completed on time	42
Projects not completed on time	8

What is the probability that the builder will **not** complete the water feature on time?

Give your answer as a **percentage**.

Probability that builder will not complete water feature on time _____ %

(3 marks)

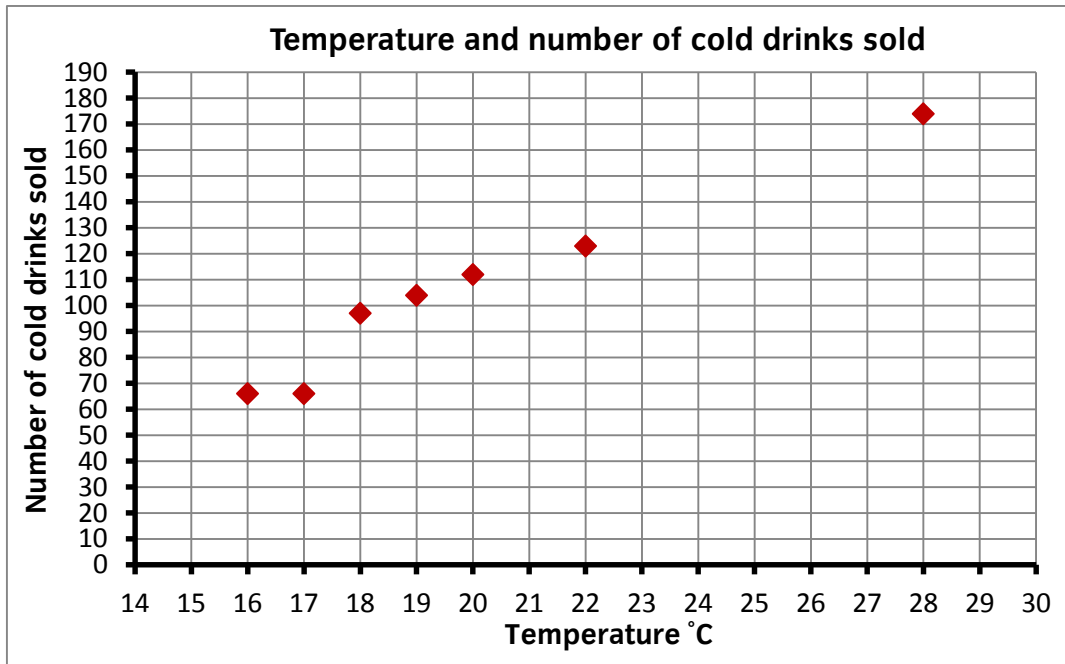
Task 2 Drink sales

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

Introduction

A stall sells cold drinks in a park on Saturdays.

This scatter graph shows the maximum temperatures for several Saturdays and the number of cold drinks the manager sold at the stall on those days.



2A

Draw a trend line **on the graph** to show the relationship between temperature and the number of drinks sold.

(2 marks)

2B

What does this trend line show about the relationship between temperature and drink sales?

Explanation

(1 mark)

2C

The maximum temperature for next Saturday is predicted to be 24°C.

Use the trend line to find the number of cold drinks the manager can expect to sell next Saturday. Show on the scatter graph how you found your answer.

Number of cold drinks _____

(2 marks)

2D

The manager of the stall sets a sales target for next Saturday. She wants to sell 50% more drinks than the average sales for the last four Saturdays.

The table below shows the drink sales for the last four Saturdays.

Date (Saturday)	27 July	03 August	10 August	17 August
Cold drink sales	66	97	123	174
Temperature (°C)	17	18	22	28

Work out the mean of the drink sales for the last four Saturdays.

Work out the sales target for tomorrow.

Show your working

Mean sales for the last four weeks _____

Sales target for tomorrow _____

(6 marks)

2E

Is it likely that the manager will meet her target?

Explain your answer. You will need to refer to the scatter graph and use a calculation in your explanation.

Show your working

Will the manager meet her target?

(Tick one box)

Yes
<input type="checkbox"/>

No
<input type="checkbox"/>

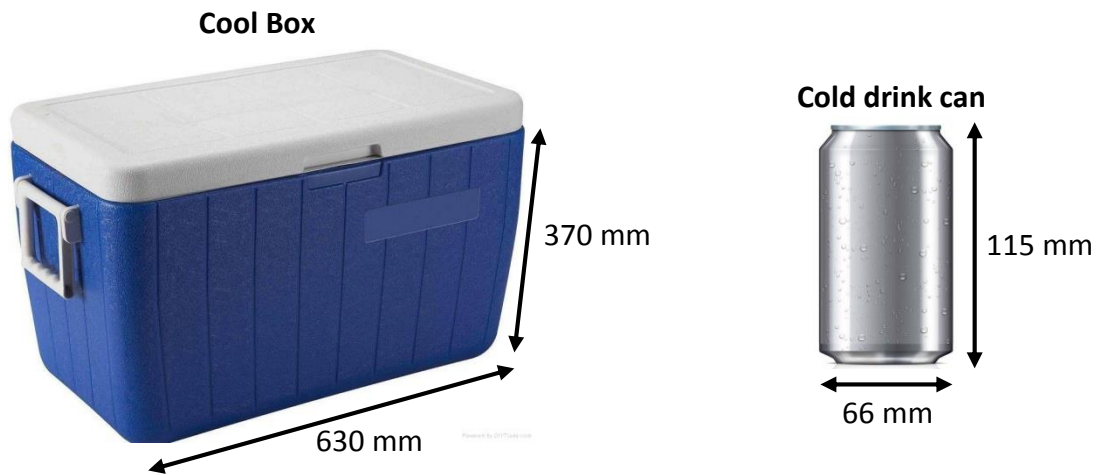
Explanation

(2 marks)

2F

The manager packs the cold drinks can into cool boxes to transport them to the park.

The pictures below (not drawn to scale) show the dimensions of a cool box and a can.



Work out how many **layers** of cans will fit in the box.

Show your working

Number of layers of cans _____

(2 marks)

2G

The statement below shows the incomes and expenses for the cold drink stall after one Saturday.

	A	B	C
1			
2	EXPENSES		
3			
4		Stall rental	£30.00
5		Buying of cold drinks (@£0.55 per can)	£121.00
6		Transport / petrol	£20.00
7		Total	£171.00
8			
9	INCOME		
10		Sales of cold drinks (@£1.20 per can)	£182.40
11			
12		PROFIT/LOSS	
13			

Did the manager sell all of the cold drinks cans that she bought?

Explain your answer. Include figures to support your explanation.

Show your working

Did the manager sell all the drinks?

(Tick one box)

Yes

No

Explanation

(4 marks)

2H

Use the statement to work out if the manager made a profit or loss on the Saturday.

Calculate the missing PROFIT/LOSS value.

Show your working

The manager made a

(Tick one box)

profit
<input type="checkbox"/>

loss
<input type="checkbox"/>

PROFIT/LOSS Value £ _____

(2 marks)

2I

Check one of your calculations in **2G** or **2H**.

Check it by a **different** method to the one you used originally.

The calculation I am going to check is in

(Tick one box)

2G
<input type="checkbox"/>

2H
<input type="checkbox"/>

Write your check here

(1 mark)

2J

This equation shows the percentage mark-up (increase in price) for an item.

$$m = \frac{S - B}{B} \times 100$$

Where: S is the selling price of an item
 B is the buying price of an item
 m is the percentage mark-up

Use the statement in 2G and this equation to work out the percentage mark-up on cold drinks can.

Show your working

Percentage mark-up _____ %

(3 marks)

End of Assessment

Extra space for working out and answers

Extra space for working out and answers

Extra space for working out and answers

**Published by City & Guilds
1 Giltspur Street
London
EC1A 9DD
www.cityandguilds.com**

**City & Guilds is a registered
charity
established to promote education
and training**