Pearson Edexcel

Functional Skills

Mathematics

Level 1

Sample Assessment Materials

Functional Skills qualifications

First teaching September 2019

Edexcel, BTEC and LCCI qualifications

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Contents

Marking Guidance for Functional Skills Mathematics Level 1 and 2

General

1. All learners must receive the same treatment. Examiners must mark the first learner in exactly the same way as they mark the last.
2. Where some judgement is required, mark schemes will provide the principles by which marks will be awarded; exemplification will not be exhaustive. When examiners are in doubt regarding the application of the mark scheme, the response should be escalated to a senior examiner to review.
3. Mark schemes should be applied positively. Learners must be rewarded for what they have shown they can do rather than penalised for omissions.
4. All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the learner's response is not worthy of credit according to the mark scheme. If there is a wrong answer (or no answer) indicated in the answer box, always check the working in the body of the script (and on any diagrams), and award any marks appropriate from the mark scheme.
5. Working is always expected. For short questions where working may not be seen, correct answers may still be awarded full marks. For longer questions, an answer in brackets from the mark scheme seen in the body of the working, implies a correct process and the appropriate marks may be awarded.
6. **Questions that specifically state that working is required**: learners who do not show working will get no marks – full details will be given in the mark scheme for each individual question.

Applying the Mark Scheme

7. The mark scheme has a column for **Process** and a column for **Evidence**. In most questions the majority of marks are awarded for the process the learner uses to reach an answer. The evidence column shows the *most likely* examples that will be seen. If the learner gives different evidence valid for the process, examiners should award the mark(s).
8. If working **is crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.
9. If there is a **choice of methods** shown, then mark the work leading to the answer given in the answer box or working box. If there is no definitive answer then marks should be awarded for the lowest scoring method shown.
10. A suspected **misread**, e.g. 528 instead of 523, may still gain process marks provided the question has not been simplified. Examiners should send any instance of a suspected misread to a senior examiner to review.
11. It may be appropriate to **ignore subsequent work (isw)** when the learner's additional work does not change the meaning of their answer.
12. **Correct** working followed by an **incorrect decision** may be seen, showing that the learner can calculate but does not understand the functional demand of the question. The mark scheme will make clear how to mark these questions.
13. **Transcription** errors occur when the learner presents a correct answer in working, and writes it incorrectly on the answer box e.g. 698 in the body and 689 in the answer box; mark the better answer if clearly only a transcription error. Examiners should send any instance of transcriptions errors to a senior examiner to review.

14. **Incorrect method** if it is clear from the working that the correct answer has been obtained from incorrect working, award 0 marks. Examiners must escalate the response to a senior examiner to review.
15. **Follow through marks (ft)** must only be awarded when explicitly allowed in the mark scheme. Where the process uses the learner's answer from a previous step, this is clearly shown.
    - Speech marks are used to show that previously incorrect numerical work is being followed through, for example '240' means their 240 coming from a correct or set of correct processes.
    - When words are used in { } then this value does not need to come from a correct process but should be the value the learner believes to be required. The constraints on this value will be detailed in the mark scheme. For example, {volume} means the figure may not come from a correct process but is clearly the value learners believe should be used as the volume.
16. Marks can usually be awarded where units are not shown. Where units are required this will be stated. For example, 5(m) indicates that the units do not have to be stated for the mark to be awarded.
17. Learners may present their answers or working in many **equivalent** ways. This is denoted oe in the mark scheme. Repeated addition for multiplication and repeated subtraction for division are common alternative approaches. The mark scheme will specify the minimum required to award these marks.
18. A **range** of answers is often allowed, when a range of answers is given e.g. [12.5, 13] this is the inclusive closed interval.
19. **Accuracy** of figures. Accept an answer which has been rounded or truncated from the correct figure unless other guidance is given. For example, for 12.66.. accept 12.6, 12.7, 12.66, 12.67 or any other more accurate figure.
20. **Probability** answers must be given as a fraction, percentage or decimal. If a learner gives a decimal equivalent to a probability, this should be written to at least 2 decimal places (unless tenths). If a learner gives the answer as a percentage a % must be used. Incorrect notation should lose the accuracy marks, but be awarded any implied process marks. If a probability fraction is given then cancelled incorrectly, ignore the incorrectly cancelled answer.
21. **Graphs.** A linear scale must be linear in the range where data is plotted, and use consistent intervals. The scale may not start at 0 and not all intervals must be labelled. The minimum requirements for labels will be given, but examiners should give credit if a title is given which makes the label obvious.

Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel Functional Skills

Centre Number	Candidate Number

Sample assessment material for first teaching September 2019

Time: 25 minutes	Paper Reference **SAML1/01**

Mathematics

Level 1
Section A (Non – Calculator)

You must have:
Pen, HB pencil, eraser, ruler graduated in cm and mm, protractor, pair of compasses.

Total Marks

My signature confirms that I will not discuss the content of the test with anyone.

Signature: _____

Instructions

- Use a **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Sign the declaration.
- Answer **all** questions.
- Write your final answers in the boxes provided.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You **must** show clearly how you get your answers in the spaces provided. Marks will be awarded for your working out.
- Check your working and your answers at each stage.
- Diagrams are **not** accurately drawn, unless otherwise indicated.
- **Calculators may not be used**
- Take the value of π to be 3.14

Information

- The total mark for this section is 14
- The marks for each question are shown in brackets.
  – *use this as a guide to how much time to spend on each question.*
- This sign ☑ shows where marks will be awarded for showing your checks.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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SECTION A

Answer ALL questions. Write your answers in the spaces provided.

1 A music festival sells tickets on its website.
There are one hundred and twenty thousand tickets for sale.

Festival news

118 200 tickets sold in the first hour.

How many tickets are still for sale after the first hour?
You **must** show your working.

(3)

(Total for Question 1 is 3 marks)

2

(a) Calculate 12^2

(1)

(b) Work out $80 - 6 \times 2$

(1)

(c) Work out $-18 - 14$

(1)

(Total for Question 2 is 3 marks)

3 Rosa makes candles to sell.

Each candle is in the shape of a cuboid of height 8 cm.
The base of each candle is a square of perimeter 20 cm.

Rosa needs to know the volume of one candle.

(a) Work out the volume of one candle.
Remember to give units with your answer.

(3)

(b) Use reverse calculations to show a check of your answer.

(1)

(Total for Question 3 is 4 marks)

4

(a) Round 11.348 correct to two decimal places.

(1)

Rashid works at an animal centre.
The animal centre sells tickets for 49 weeks of the year.

A student ticket costs £9.90
The animal centre sold 23 student tickets last week.

Rashid assumes that the same number of student tickets are sold each week.
He wants to estimate the income from the sale of student tickets for the year.

(b) Estimate the income from the sale of student tickets for the year.

(3)

£

(Total for Question 4 is 4 marks)

TOTAL FOR SECTION A = 14 MARKS

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Level 1 - Section A: Mark Scheme

Question	Process	Mark	Mark Ref	Evidence
Q1	Writes number in figures	1	A	120000 May be seen or used in subsequent working
	Process to subtract figures	1 or	B	{Figure} – 118200 (= 1800) oe Allow figure to be a number that includes the digits 1 and 2.
	Accurate figure supported by working	2	BC	1800
	Total marks for question	**3**		

Question	Process	Mark	Mark Ref	Evidence
Q2(a)	Accurate figure	1	A	144
Q2(b)	Accurate figure	1	B	68
Q2(c)	Accurate figure	1	C	– 32
	Total marks for question	**3**		

Question	Process	Mark	Mark Ref	Evidence
Q3(a)	Process to find length of base	1 or	A	20 ÷ 4 (= 5)
	Process to find volume	2 or	AB	'5' × '5' × 8 (= 200)
	Accurate figure with correct units	3	ABC	200 cm^3
Q3(b)	Valid reverse check	1	D	e.g. '200' ÷ '5' = 40 **and** '40' ÷ '5' = 8 **and** '5'× 4 = 20 NB ft their volume and side length
	Total marks for question	**4**		

Question	Process	Mark	Mark Ref	Evidence
Q4(a)	Accurate figure	1	A	11.35
Q4(b)	Rounds a number to a manageable figure	1	B	e.g. Use of 10 **or** 50 **or** 25 **or** 20 May be seen in a calculation
	Calculates a total value using their rounded figure(s)	1 or	C	e.g. '10' × '50' × '25' (= 12500) **OR** '10' × '50' × '20' (= 10000) Allow 23 × 49 × 9.9 (= 11157.3) for this mark only.
	Accurate figure from their estimation(s)	2	CD	e.g. 12500 **OR** 10000
	Total marks for question	**4**		

Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel Functional Skills

Centre Number	Candidate Number

Sample assessment material for first teaching September 2019

Time: 1 hour 30 minutes | Paper Reference **SAML1/01**

Mathematics

Level 1
Section B (Calculator)

You must have:
Pen, calculator, HB pencil, eraser, ruler graduated in cm and mm, protractor, pair of compasses.

Total Marks

My signature confirms that I will not discuss the content of the test with anyone.

Signature: _____

Instructions

- Use a **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Sign the declaration.
- Answer **all** questions.
- Write your final answers in the boxes provided.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You **must** show clearly how you get your answers in the spaces provided. Marks will be awarded for your working out.
- Check your working and your answers at each stage.
- Diagrams are **not** accurately drawn, unless otherwise indicated.
- If your calculator does not have a π button take the value of π to be 3.14
- **Calculators may be used.**

Information

- The total mark for this section is 42
- The total mark for this paper is 56
- The marks for each question are shown in brackets.
  – *use this as a guide to how much time to spend on each question.*
- This sign ☑ shows where marks will be awarded for showing your checks.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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S 6 4 8 5 1 A 0 1 1 6

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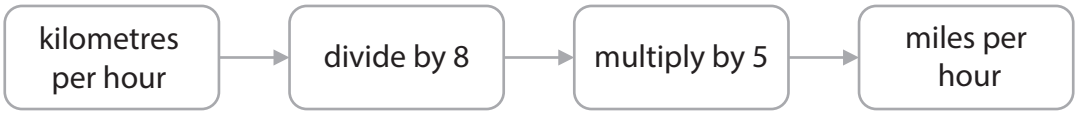
SECTION B

Answer ALL questions. Write your answers in the spaces provided.

1 Ryan will drive his car in Spain.

The speedometer in the car shows the speed in miles per hour only.
He will be driving on a road with a speed limit of 100 kilometres per hour.

Ryan uses this rule to find this speed in miles per hour.



Ryan thinks that 70 miles per hour is the same as 100 kilometres per hour.

Is Ryan correct?

(3)

(Total for Question 1 is 3 marks)

2 Nicola wants to buy 30 litres of white paint.

She sees this special offer.

White paint

10 litre tin
usual price £38

15% discount

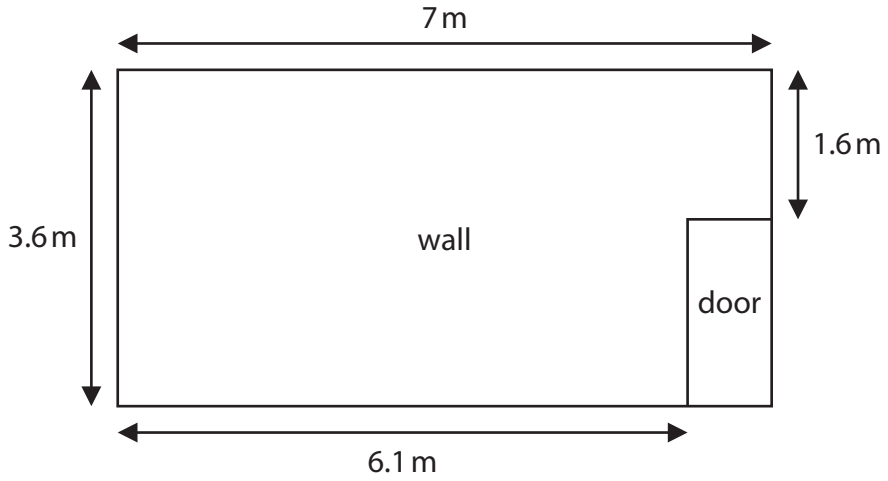
Nicola uses this special offer.
She has a budget of £100 for the paint.

Does Nicola have enough money to buy 30 litres of white paint?

(4)

(Total for Question 2 is 4 marks)

3 Luke wants to cover this wall with blue paint.



He will buy blue paint in 2.5 litre tins.
Each 1 litre of blue paint will cover 8 m^2 of the wall.

How many tins of blue paint does Luke need to buy?

(5)

tins

(Total for Question 3 is 5 marks)

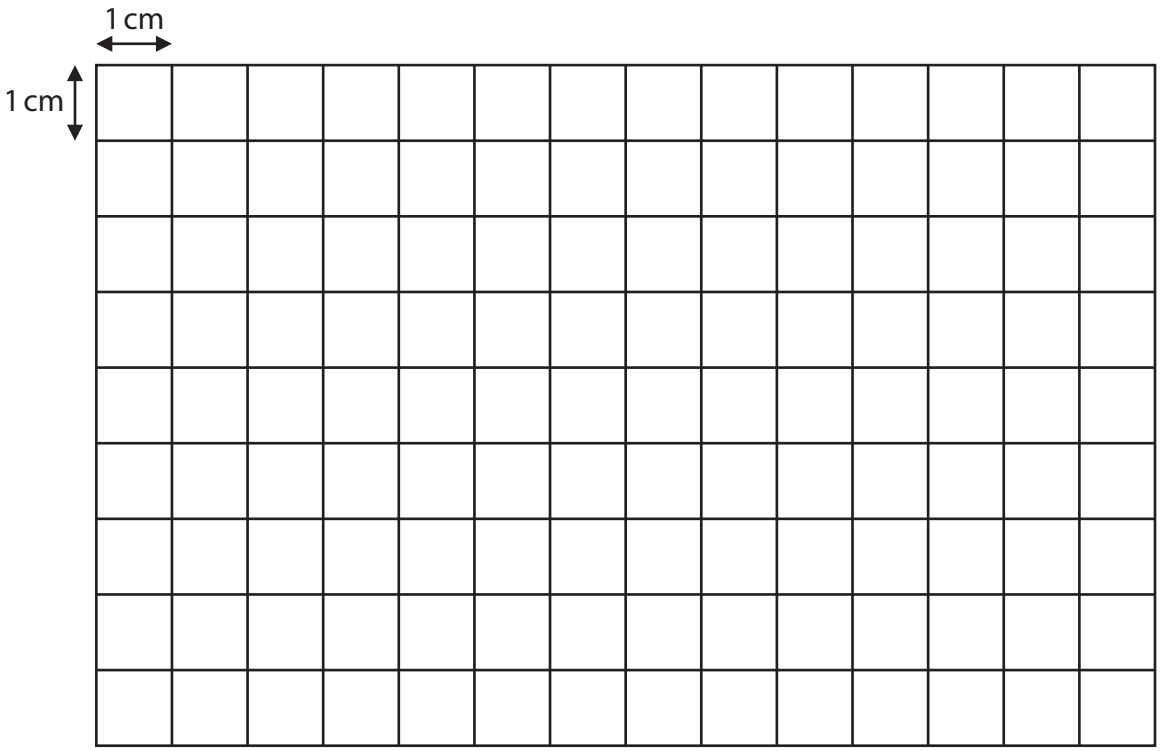
4 Chris is designing a badge.

The badge needs to

- be in the shape of a trapezium
- have a base of length 6 cm
- have only one line of symmetry.

Draw a suitable badge.
Use the grid below to draw a badge.

(3)



(Total for Question 4 is 3 marks)

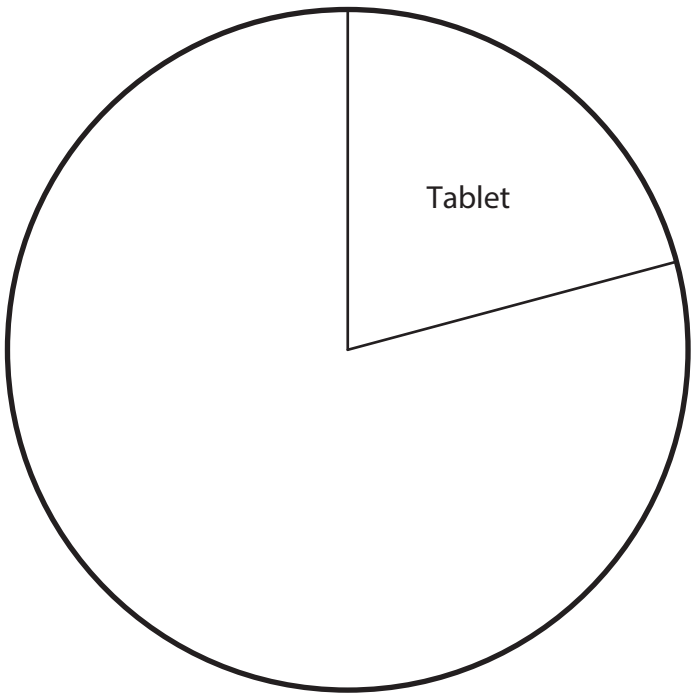
5 Jimmy works in a shop.
He has this information about the 72 items sold last week.

Item	Number sold	Angle size
Tablet	15	75
Phone	44	
Laptop	13	

Jimmy starts to display this information in a pie chart.

Complete the pie chart for Jimmy.

(3)



(Total for Question 5 is 3 marks)

6 Ben is an activity leader.
He is planning a team-building event for a group of people.
Ben has this part of a map.

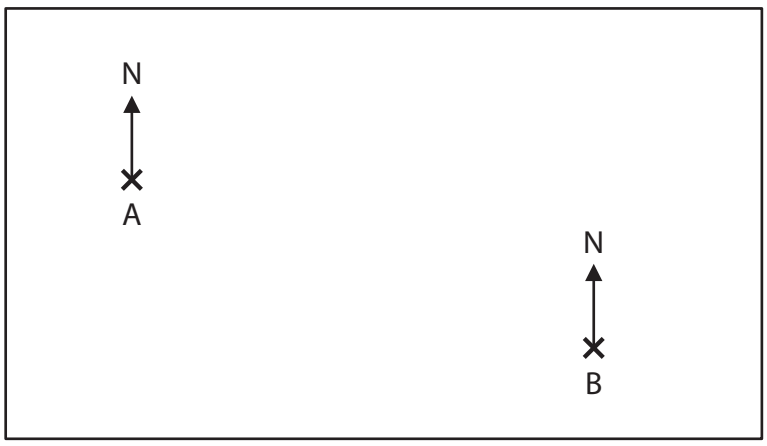


Diagram drawn accurately

Key: 1 cm on the map is 1000 m on the ground

The group will start at point A and walk directly to point B.

Ben needs to write instructions to give to the group.
The instructions need to include the

- bearing
- distance to be walked.

(a) Write the instructions for the group.
Remember to give units with your answer.

(4)

Ben records the time it took each person to complete a different event.

He is completing a table with information.

	Time (minutes)
Mean	39
Range	26
Longest time	53
Shortest time	

(b) Complete the table.

(2)

(Total for Question 6 is 6 marks)

7 The table shows the price of a cup of tea in 5 different cafes.

cafe	A	B	C	D	E
price	£1.80	£1.59	£1.65	£1.45	£1.70

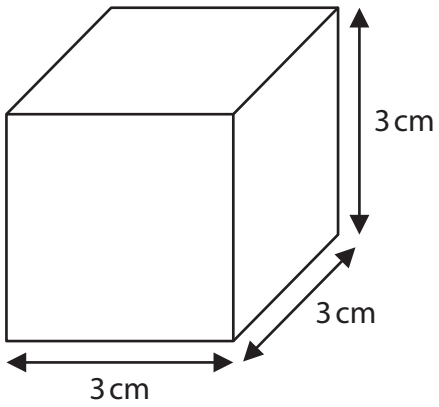
Calculate the mean price of a cup of tea.

(3)

£

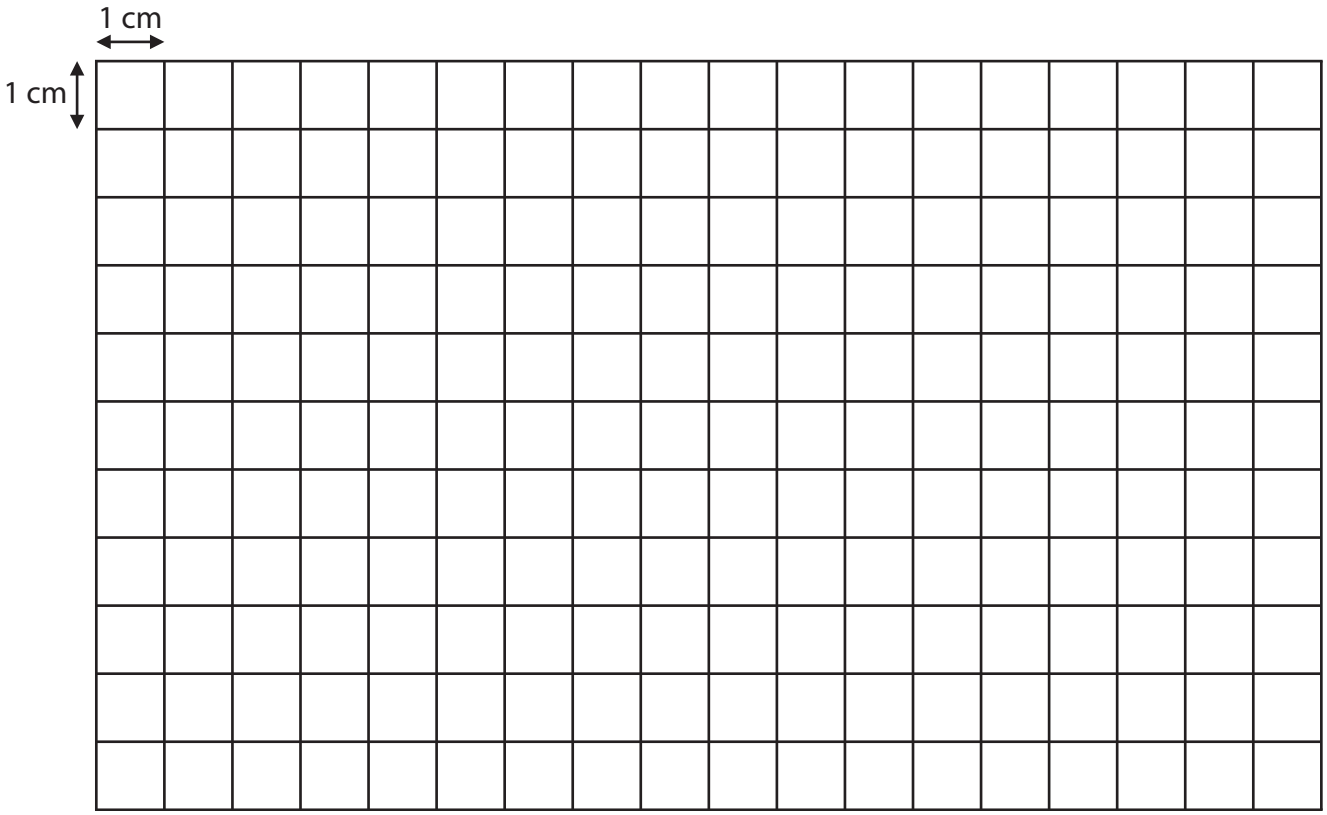
(Total for Question 7 is 3 marks)

8 Here is a cube of side length 3 cm.



Draw a net of the cube.
Use the grid below to draw your net.

(3)



(Total for Question 8 is 3 marks)

9 Charlie works in a beauty salon.

He has three appointments today.
The time needed for each appointment is

- Mrs Green ($1\frac{1}{2}$ hours)
- Ms Price (1 hour 20 minutes)
- Sam ($3\frac{1}{4}$ hours).

He will have a 45 minute break.

Charlie will start work at 9:15 am
He wants to finish work by 4:30 pm

Will Charlie finish work by 4:30 pm?

(4)

(Total for Question 9 is 4 marks)

10 Oscar is organising a show.

Visitors to the show choose their seats at random.
There are 350 seats available.
These seats are numbered from 1 to 350

Oscar places a prize under each of the seats numbered 17 to 25

(a) What is the probability that the first visitor chooses a seat with a prize?

(2)

$$\frac{\square}{\square}$$

The probability that a visitor buys a soft drink at the show is $\frac{3}{4}$

(b) Which of these describes this probability?

(1)

Tick [✔] a box to show your answer.

[ ] impossible

[ ] unlikely

[ ] even chance

[ ] likely

[ ] certain

(Total for Question 10 is 3 marks)

11 Holly works at a garage.
Mr Bakir brings his car in for a service.
He also buys 2 tyres and a battery.

Holly has this list of costs

- service £110
- tyres £49.99 each
- battery £89

She uses this list to start to work out the bill for Mr Bakir.

Holly also has to charge 20% VAT on the costs to work out the total bill.

(a) Work out the total bill.

(4)

£

(b) Use estimation to show a check of your answer.

(1)

(Total for Question 11 is 5 marks)

TOTAL FOR SECTION B = 42 MARKS
TOTAL FOR PAPER = 56 MARKS

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Level 1 - Section B: Mark Scheme

Question	Process	Mark	Mark Ref	Evidence
Q1	Process to begin to work with formula	1 or	A	e.g. 100 ÷ 8 (= 12.5) **OR** 70 ÷ 5 (= 14)
	Full process to work with formula	2 or	AB	100 ÷ 8 × 5 (= 62.5) oe **OR** 70 ÷ 5 × 8 (= 112) oe
	Valid decision with accurate figures	3	ABC	No **AND** 62.5 (miles per hour) **OR** No **AND** 112 (km per hour)
	Total marks for question	**3**		

Question	Process	Mark	Mark Ref	Evidence
Q2	Begins to work with percentage discount	1 or	A	38 × 0.15 (= 5.7) **OR** 1 – 0.15 (= 0.85) **OR** '114' × 0.15 (= 17.1)
	Full process to work with percentage discount	2	AB	38 × 0.85 (= 32.3) oe **OR** '114' × 0.85 (= 96.9) oe
	Process to find total cost with or without discount or find the amount of budget left	1	C	38 × 30 ÷ 10 (= 114) **OR** '32.3' × 30 ÷ 10 (= 96.9) **OR** 100 – '32.3' – '32.3' – '32.3' (= 3.1)
	Valid decision with accurate figure	1	D	Yes **AND** (£)96.9(0) **OR** Yes **AND** (£)3.1(0) (spare)
	Total marks for question	**4**		

Question	Process	Mark	Mark Ref	Evidence
Q3	Process to find a missing length	1	A	7 – 6.1 (= 0.9) **OR** 3.6 – 1.6 (= 2)
	Process to find one relevant area	1 or	B	e.g. 3.6 × 6.1 (= 21.96) **or** 1.6 × 7 (= 11.2) **or** 1.6 × '0.9' (= 1.44) **or** '2' × 6.1 (= 12.2) **or** 7 × 3.6 (= 25.2) **or** '2' × '0.9' (= 1.8)
	Full process to find total area or total paint needed	2	BC	e.g. (3.6 × 6.1) + (1.6 × '0.9') (= 23.4) **or** (1.6 × 7) + ('2' × 6.1) (= 23.4) **or** **(**7 × 3.6) – ('2' × '0.9') (= 23.4) **OR** '1.4'+ '1.525' (= 2.925)
	Process to work with proportion	1	D	e.g. {Area} ÷ 8 (= 2.925) **OR** {Area} ÷ 2.5 ÷ 8 (= 1.17) oe **OR** '11.2' ÷ 8 (= 1.4) **or** '12.2' ÷ 8 (= 1.525)
	Accurate figure	1	E	2
Total marks for question		**5**		

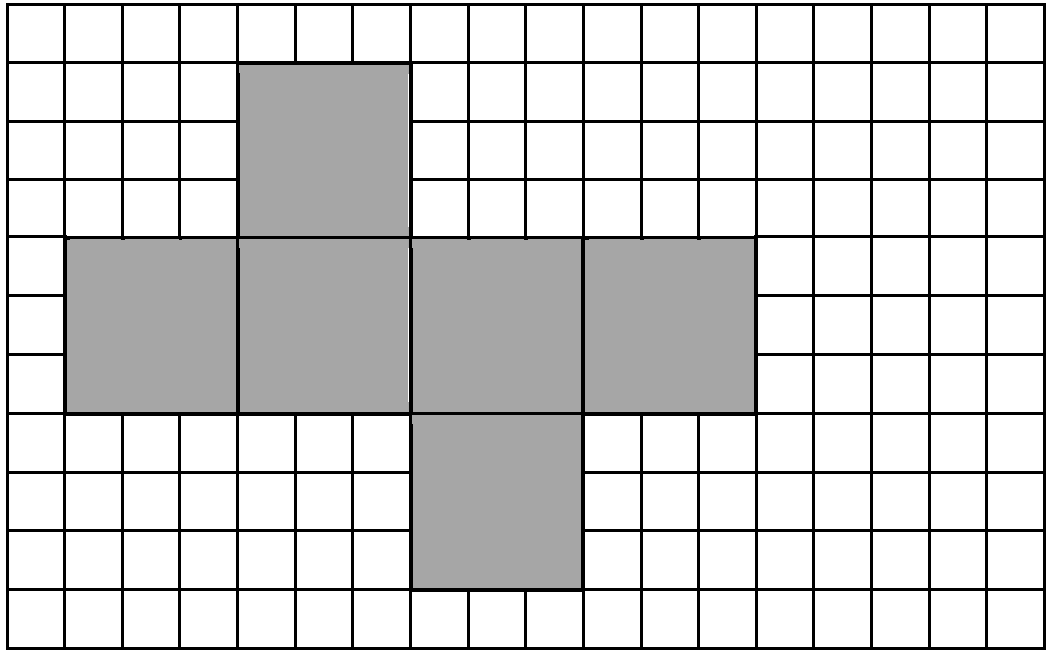
Question	Process	Mark	Mark Ref	Evidence
Q4	Begins to work with constraints	1 or	A	Draws a trapezium **OR** draws a line of 6cm **OR** a closed shape with one line of symmetry
	Draws a trapezium with one other constraint	2 or	AB	Draws a trapezium using a side of 6cm **OR** Draws a trapezium with only one line of symmetry
	Fully correct diagram	3	ABC	Draws a trapezium **and** base of 6cm **and** only one line of symmetry NB. Trapezium may be in any orientation.
	Total marks for question	**3**		

Question	Process	Mark	Mark Ref	Evidence
Q5	Begins to work with angles or proportion	1 or	A	e.g. 360 ÷ 72 (= 5) **OR** 75 ÷ 15 (= 5) **OR** 44 ÷ 72 (= 0.61..) **or** 13 ÷ 72 (= 0.18..) May be seen in subsequent calculations
	Process to find one angle or draw 1 angle correctly	2 or	AB	e.g. '5' × 44 (= 220) oe **OR** 13 ÷ 72 × 360 (= 65) oe May be indicated by one accurately drawn angle
	Fully correct and labelled pie chart	3	ABC	220^0 **and** 65^0 **and** labelled correctly ($\pm 2^0$)
	Total marks for question	**3**		

Question	Process	Mark	Mark Ref	Evidence
Q6(a)	Angle measured correctly as a bearing from north	1	A	110 º allow ±2 º tolerance
	Measures distance between point A and point B	1	B	6.5 (cm) allow ±2 mm tolerance oe May be implied by subsequent working
	Process to work with scale	1 or	C	{length} × 1000 (= 6500) oe Allow length from 6 to 7 cm
	Accurate figure from their measurement with units	2	CD	e.g. 6500 m **or** 6.5 km
Q6(b)	Process to work with range	1 or	E	53 – 26 (= 27) **OR** 53 – shortest time = 26 **or** 26 + shortest time = 53
	Accurate figure	2	EF	27
	Total marks for question	**6**		

Question	Process	Mark	Mark Ref	Evidence
Q7	Begins process to work with mean	1 or	A	e.g. 1.8(0) + 1.59 + 1.65 + 1.45 + 1.7(0) (= 8.19)
	Full process to work with mean	2 or	AB	'8.19' ÷ 5 (= 1.638)
	Accurate figure	3	ABC	1.63 **or** 1.64
	Total marks for question	**3**		

Question	Process	Mark	Mark Ref	Evidence
Q8	Begins to draw a net	1 or	A	1 square face drawn of correct size (3cm by 3cm) NB ignore all other faces
	Develops solution	2 or	AB	6 faces of correct size drawn that don't fold into a correct net **OR** 5 faces of correct size that form an open cube **OR** Fully correct net of a cube of side length x where $x \neq 3$
	Correct net drawn	3	ABC	Fully correct net Do not accept any 3D representations.
	Total marks for question	**3**		



Question	Process	Mark	Mark Ref	Evidence
Q9	Process to convert at least 1 time	1	A	e.g. $1\frac{1}{2} \times 60$ (= 90) **or** $3\frac{1}{4} \times 60$ (= 195) May be seen in subsequent working
	Begins to calculate with time	1 or	B	e.g. Adds at least 3 of '90' , '80' , '195' , 45 **OR** subtracts at least 2 times from 4:30 **OR** adds at least 2 times to 9:15 **OR** 4:30 – 9:15 (= 7 hrs 15 mins) oe
	Full process to find elapsed time and time available or start time or finish time	2 or	BC	e.g. '90' + '80' + '195' + 45 (= 410) **and** 4:30 – 9:15 (= 435) oe **OR** 9:15 + '90' + '80' + '195' + 45 (= 4:05) **OR** 4:30 – ('90' + '80' + '195' + 45) (= 9:40)
	Valid decision with accurate figures	3	BCD	e.g. Yes **AND** 410 (mins) **and** 435 (mins) oe **OR** Yes **AND** (he will finish by) 4:05 (pm) oe **OR** Yes **AND** (he can start at) 9:40 (am) oe **OR** Yes **AND** 25 (mins) (spare)
	Total marks for question	**4**		

Question	Process	Mark	Mark Ref	Evidence
Q10(a)	Gives a probability using total number of seats or identifies the correct number of seats with a prize	1 or	A	$\frac{a}{350}$ **and** $a < 350$ **OR** 9 (seats) indicated
	Accurate probability	2	AB	$\frac{9}{350}$ oe ISW incorrect simplification of their fraction
Q10(b)	Selects correct word to describe likelihood	1	C	Likely
Total marks for question		**3**		

Question	Process	Mark	Mark Ref	Evidence
Q11(a)	Begins process to work with percentage	1 or	A	e.g. '298.98' ÷ 100 × 20 (= 59.796) oe **OR** 110 × 0.2 (= 22) **or** 49.99 × 0.2 (= 9.998) **or** 2 × 49.99 × 0.2 (= 19.996) **or** 89 × 0.2 (= 17.8) oe **OR** (100 + 20) ÷ 100 (= 1.2)
	Full process to work with percentage increase	2	AB	e.g. '298.98' × '1.2' (= 358.776) oe **OR** 110 × '1.2' (= 132) **or** 49.99 × '1.2' (= 59.988) **or** 2 × 49.99 × '1.2' (= 119.976) **or** 89 × '1.2' (= 106.8) oe
	Full process to find cost of the bill with or without VAT	1 or	C	110 + (2 × 49.99) + 89 (=298.98) **OR** '132' + '119.976' + '106.8' (= 358.776) oe
	Accurate figure truncated or rounded to 2dp	2	CD	358.77 **or** 358.78
Q11(b)	Valid estimation check	1	E	e.g. 100 + 50 + 50 + 90 = 290 so my answer is sensible **or** 100 + 50 + 50 + 100 = 300 and my answer is just above **or** (100 + 50 + 50 + 100) × 0.2 = 60 which is roughly what the VAT is so my answer is sensible
	Total marks for question	**5**		

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