

Surname	Centre Number	Candidate Number
First name(s)		0

**GCSE**

3310U20-1



A24-3310U20-1

THURSDAY, 7 NOVEMBER 2024 – MORNING

MATHEMATICS – NUMERACY
UNIT 2: CALCULATOR-ALLOWED
FOUNDATION TIER

1 hour 30 minutes

ADDITIONAL MATERIALS

A calculator will be required for this paper.

A ruler, a protractor and a pair of compasses may be required.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

You may use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. If you run out of space, use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

Take π as 3.14 or use the π button on your calculator.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part-question.

In question 1, the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

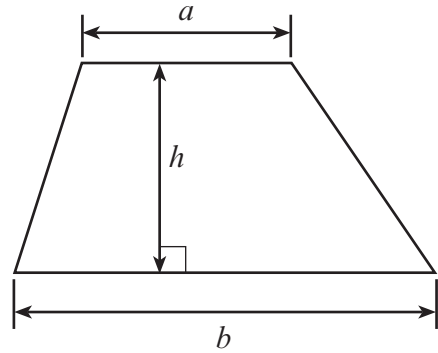
For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	8	
2.	7	
3.	9	
4.	8	
5.	4	
6.	4	
7.	4	
8.	8	
9.	4	
10.	4	
11.	5	
Total	65	



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Formula List – Foundation Tier

Area of trapezium $= \frac{1}{2} (a + b)h$



2.

Hannah's School of Driving

First lesson: £45
All other lessons: £28 each lesson

- (a) Jamie has 5 lessons with Hannah's School of Driving.
Work out the total cost of these lessons. [2]

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- (b) Lynne also had lessons with Hannah's School of Driving to prepare for her driving test.
The total cost of Lynne's lessons was £521.
How many lessons did Lynne have?
You must show all your working. [3]

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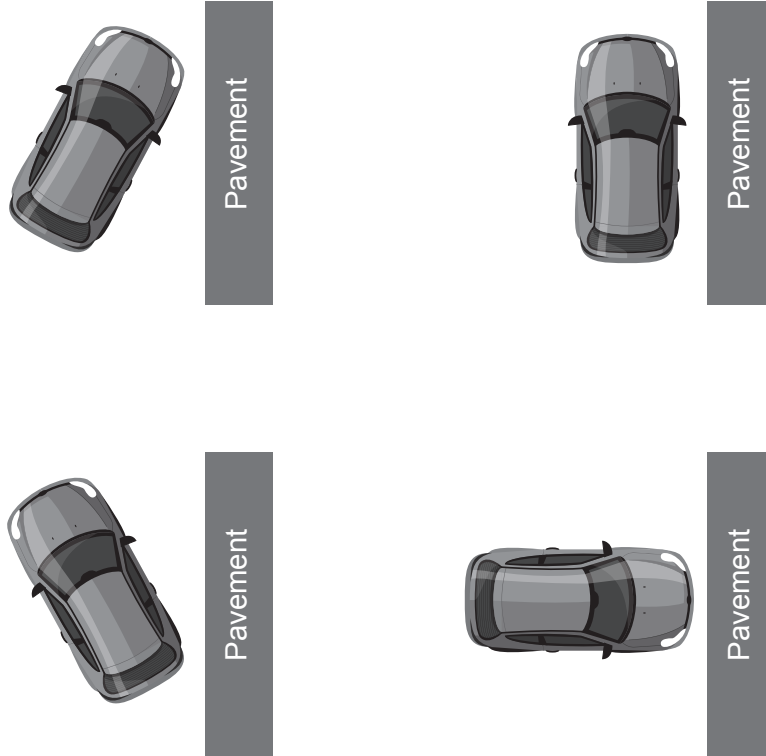
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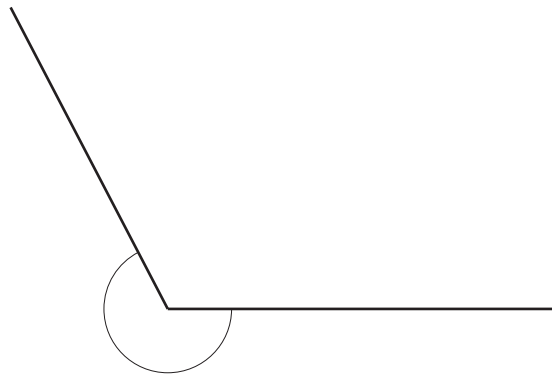
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- (c) During her test, the examiner asked Lynne to park the car parallel to the pavement. Which diagram shows a car parked parallel to a pavement? Circle your answer. [1]



- (d) During the test, Lynne had to reverse around a corner. The angle of the corner is shown below.



What is the name for this angle?
Circle your answer.

[1]

- Acute angle Right angle Obtuse angle Straight line Reflex angle



3. Dafydd plays football for his local team.

- (a) Dafydd is working on his fitness.
Dafydd uses this formula to calculate his Body Mass Index (BMI):

$$\text{BMI} = \text{mass} \div \text{height}^2$$

where mass is in kilograms and height is in metres

Football players should have a BMI between 18 and 24.9.

Dafydd's mass is 79 kg and his height is 1.8 m.

Calculate Dafydd's BMI.

[2]

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- (b) Dafydd's first game of football was on Saturday.
The match started at 3 p.m.

- The playing time of the match was $1\frac{1}{2}$ hours.
- Half time was 15 minutes long.
- After the game, the players completed cool-down exercises and stretching for 20 minutes.
- Dafydd took 25 minutes to shower and change.
- The journey home took 45 minutes.

At what time did Dafydd arrive home?
You must show all your working.

[3]

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- (c) The list below shows the number of goals that Dafydd's football team scored in each of their last 7 games.

3 1 6 3 1 1 2

The football coach looks at this data.

- (i) The coach says,

"The median number of goals scored per game is three."

Show that the coach is not correct. [2]

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- (ii) What is the mode of the number of goals scored per game for the team? [1]

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- (iii) Calculate the range of the number of goals scored per game. [1]

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4. The diagram below shows a rectangular grass lawn within a rectangular playground. James lays soft flooring over all the playground except the grass lawn.

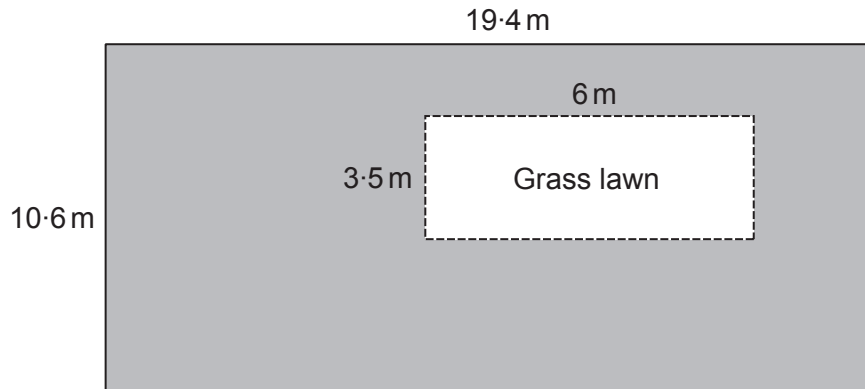


Diagram not drawn to scale

- (a) What is the area of playground that James covers with soft flooring?
State the units of your answer.

[4]

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- (b) James lays an edging strip around the outer perimeter of the playground.
The edging strip costs £2.95 per metre.
What is the total cost of the edging strip for the outer perimeter of the playground?

[4]

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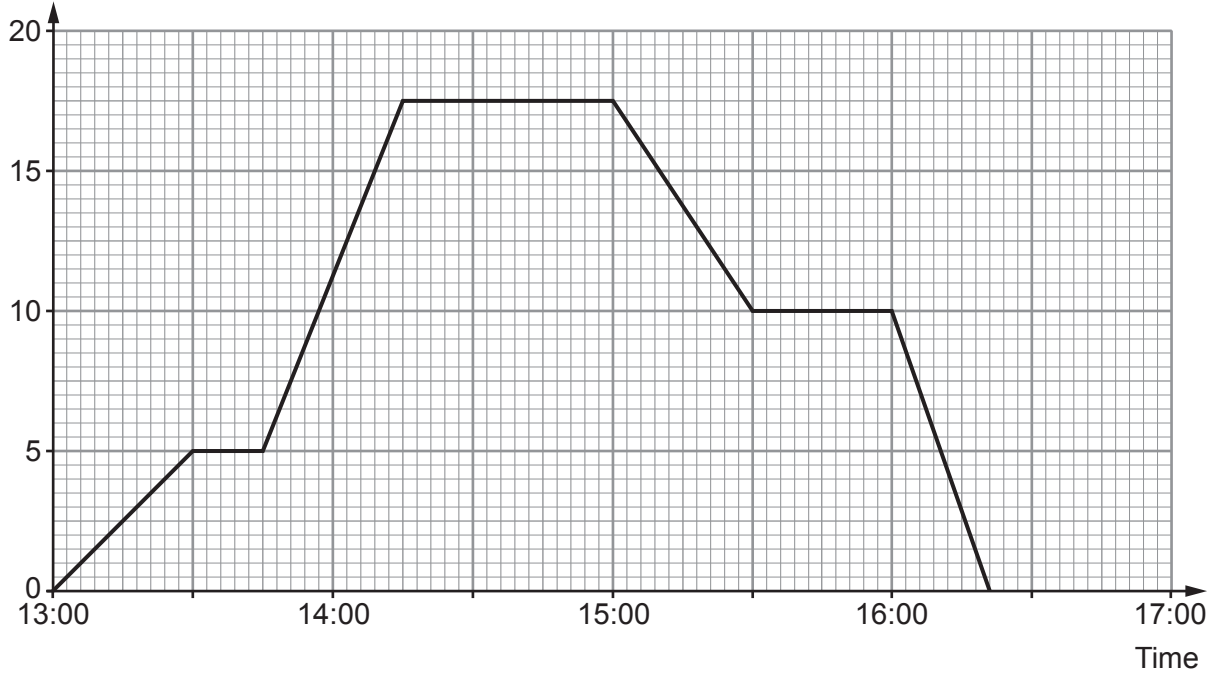
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5. Yesterday, Jemila cycled along a straight track from home to the beach and back.

Distance from home (km)



(a) For how many minutes was Jemila 17.5 km from home? [1]

..... minutes

(b) At what time did Jemila first start cycling in the direction of home?
Circle your answer. [1]

13:30 14:15 15:00 15:30 16:00

(c) By 15:30, how many kilometres in total had Jemila cycled? [1]

..... km

(d) Jemila was due to get home at 16:30.
She arrived home early.
How many minutes early was she? [1]

..... minutes


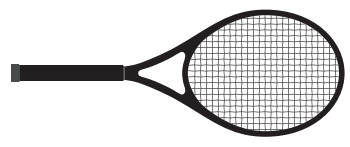



Examiner only

6. Lewis buys an annual discount card to use in a sports shop. He pays £9.95 for the discount card.

For one year, Lewis gets 15% off anything he buys in this sports shop when he shows his discount card.

During the year, Lewis buys the following three items.

Full price before discount		
 Trainers £55	 Tennis racket £18	 T-shirt £12

How much did Lewis save during the year by using his discount card?
Remember that Lewis had to buy his discount card.
You must show all your working.

[4]

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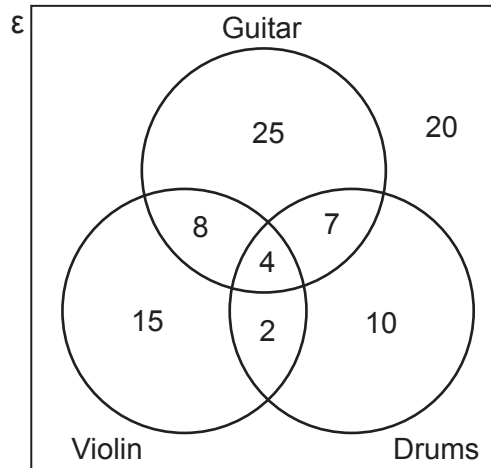
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7. A music teacher asked all Year 7 students to choose which musical instruments they would like to be able to play. They could choose from three instruments: guitar, drums and violin. The students could choose as many of these instruments as they wished.

The Venn diagram shows the results.



- (a) How many students did not choose an instrument? [1]
 students
- (b) How many students chose all 3 instruments? [1]
 students
- (c) How many Year 7 students were there? [1]

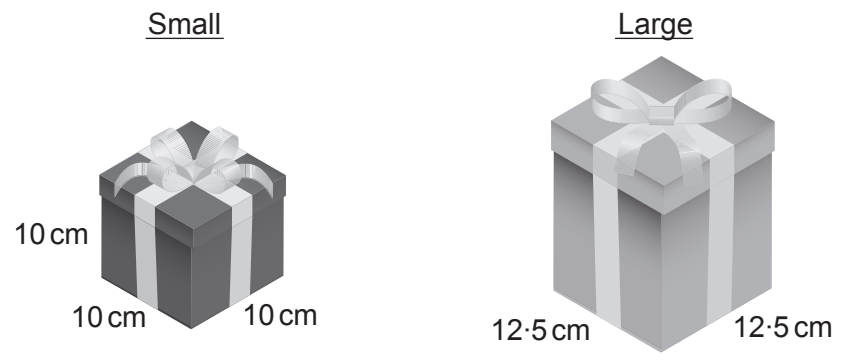
 students
- (d) How many students chose 2 or more instruments? [1]

 students



8. PressiePacs is a company that designs and makes presentation boxes.

- (a) Two designs, small and large, are shown below.
 PressiePacs wants the large box to have **twice** the volume of the small box.



Diagrams not drawn to scale

Calculate the height of the large box. [5]

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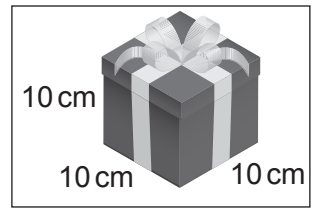
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- (b) Customers can use this formula to calculate the cost of a presentation box:

$$\text{Cost in } \pounds = \text{Surface area of the box in cm}^2 \div 240$$



Calculate the cost of the **small** presentation box. [3]

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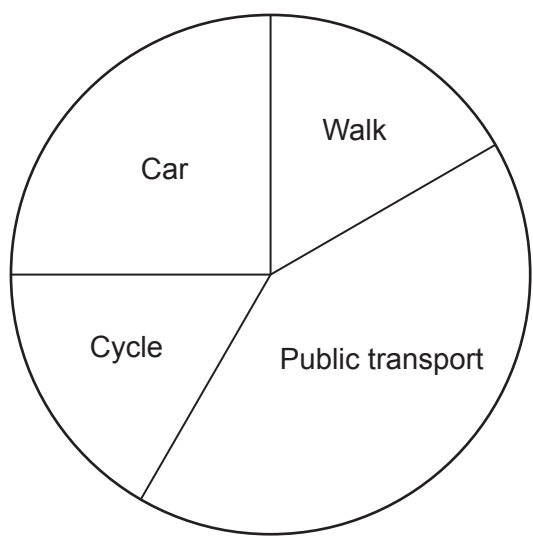
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Cost of the small presentation box is £



Examiner only

9. 72 000 people were asked to state their main way of travelling to work. The results are shown accurately in the pie chart.



The people who said 'Public transport' travel to work **either** by bus **or** by train. For every person who travels to work by bus, there are 4 people who travel by train. Calculate the number of people who travel to work by **train**. You must show all your working.

[4]

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10. Alfred has been given the job of varnishing a floor.
A plan of the floor is shown in the diagram below.

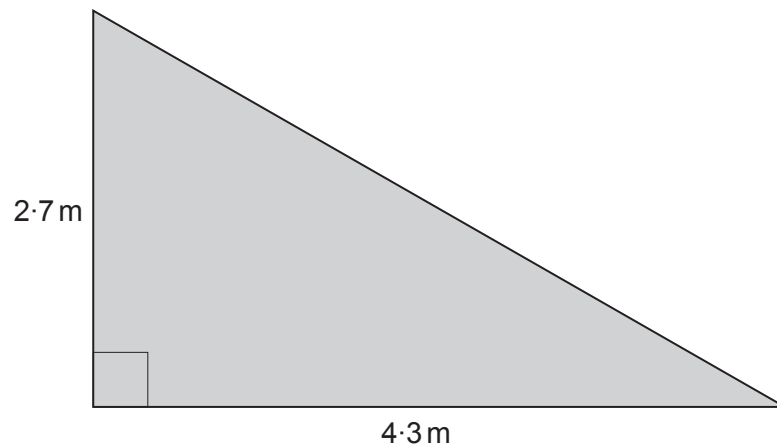


Diagram not drawn to scale

One tin of varnish contains enough to cover an area of 1.6 m^2 .

Alfred says,

I only need 3 tins of varnish to do this job.

Is Alfred correct?

Yes

No

You must show all your working.

[4]

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Examiner
only

11. Steffan uses 654 kWh of electricity in a three-month period.

Electricity costs £0.30 per kWh.
The standing charge for the three-month period is £54.
Steffan has to pay VAT at 5% on the **total** cost.

Calculate Steffan's electricity bill.
You must show all your working.

[5]

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END OF PAPER



