

Write your name here

Surname

Other names

**Pearson Edexcel
Functional Skills**

Centre Number

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Candidate Number

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Mathematics

Level 2



11 – 15 May 2015

Time: 1 hour 30 minutes

Paper Reference

FSM02/01

You must have:

Pen, calculator, HB pencil, eraser, ruler graduated in cm and mm, protractor, compasses.

Total Marks

My signature confirms that I will not discuss the content of the test with anyone until the end of the 5 day test window.

Signature: _____

Instructions

- Use a **black** 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.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**

Information

- The total mark for this paper is 48.
- The marks for each question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- **Where you see this sign you must show clearly how you get your answers because marks will be awarded for your working out.**
- **Check your working and your answers at each stage.**



Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.

Turn over ►

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PEARSON

SECTION A: Chocolates

Answer all questions in this section.

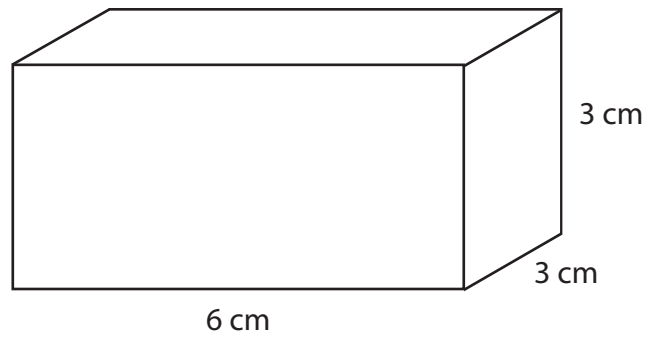
Write your answers in the spaces provided.

1 Colin makes and sells chocolates.

He has an order for some boxes of chocolates to give to guests at a wedding.

Each box will have a lid and contain two chocolates.

Colin needs each box to be a cuboid 6 cm by 3 cm by 3 cm.



He needs to draw a net for one of these boxes.

(a) Draw an accurate net for one of these boxes for Colin.

(2)

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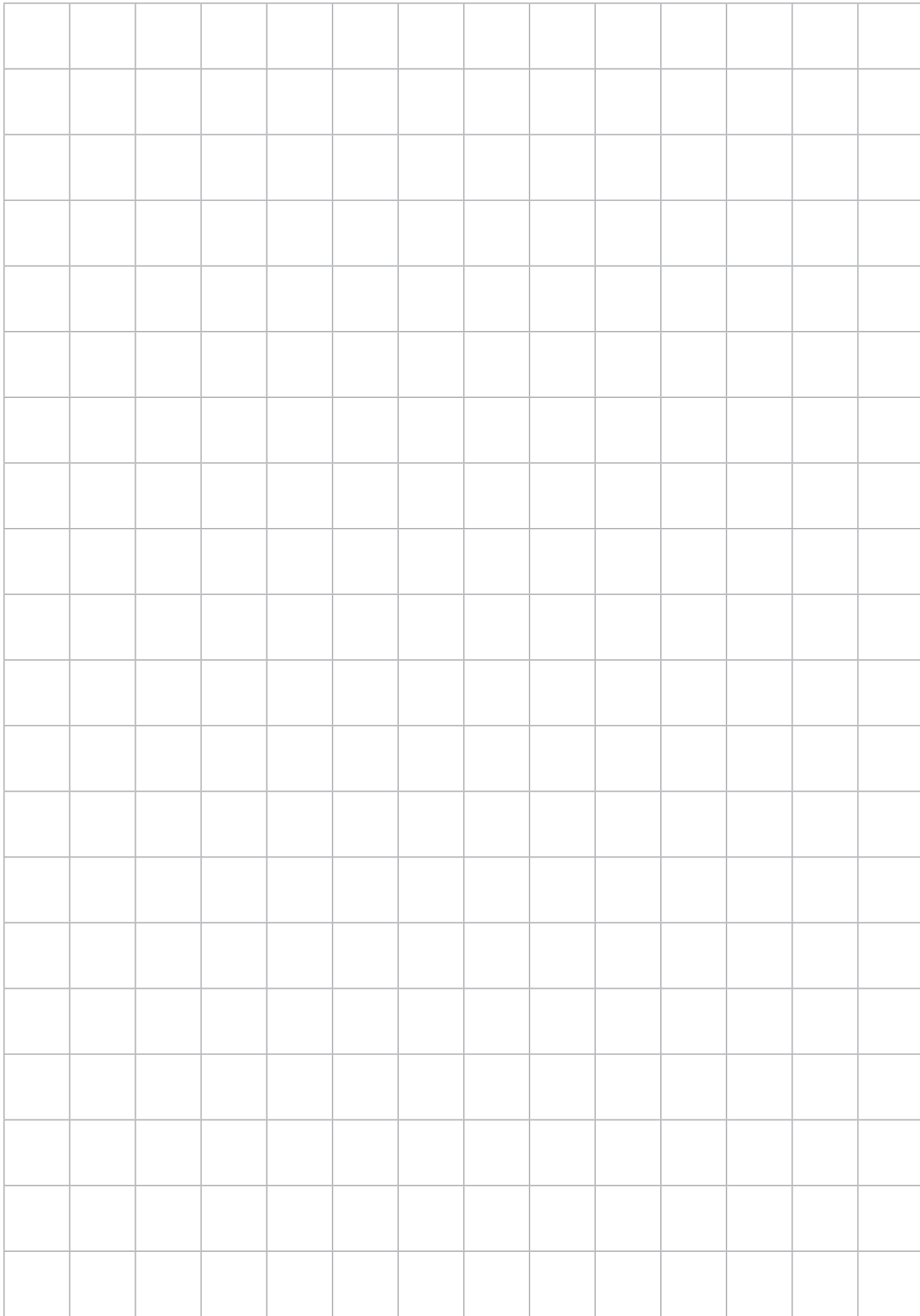
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Draw an accurate net on the centimetre grid.



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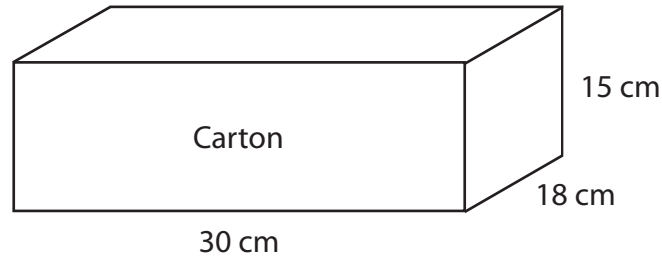
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P 4 5 1 8 0 A 0 3 2 0

The order is for 120 small boxes of chocolates.
Colin wants to pack all these boxes in one carton.

He has a carton in the shape of a cuboid 30 cm by 18 cm by 15 cm.



Each box of chocolates is a cuboid 6 cm by 3 cm by 3 cm.

Colin thinks that he can fit all 120 boxes in the carton.

(b) Is Colin correct?
Show why you think this.

(3)

Use the box below to show clearly how you get your answer.



A large empty rectangular box for writing the answer.

(Total for Question 1 is 5 marks)

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2 Colin needs to make chocolate truffles for the order.

He is going to fill 120 boxes.
There will be 2 truffles in each box.

Colin is going to use this recipe.

Chocolate Truffles (makes 50)
280 g dark chocolate
284 ml cream
50 g unsalted butter

Colin has 1250 g of dark chocolate.

Does Colin have enough dark chocolate to make all the truffles he needs? (4)

Use the box below to show clearly how you get your answer.



A large empty rectangular box for writing the answer and showing the working.

(Total for Question 2 is 4 marks)

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3 Colin has information about his profits for the past two years.

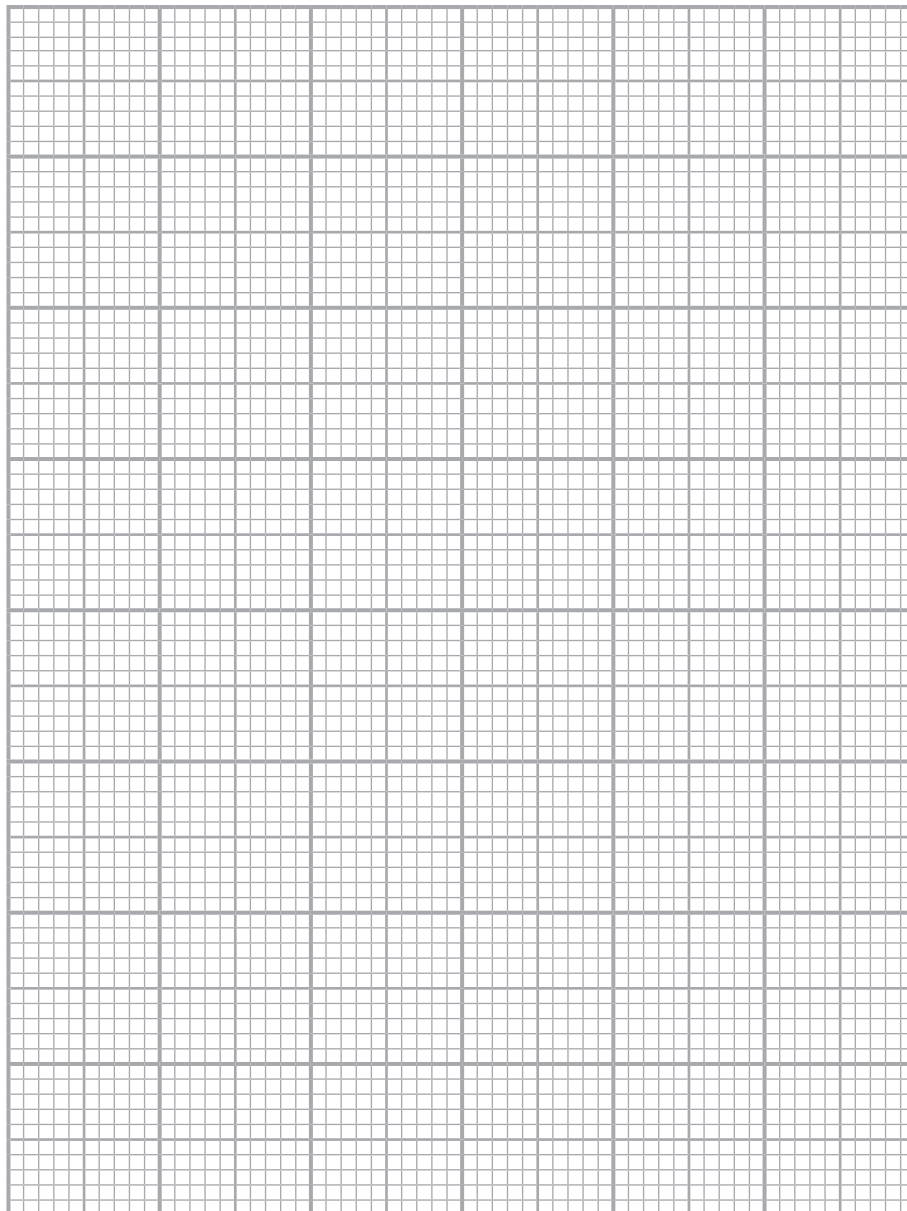
	Jan – Jun	Jul – Dec
2013	£5000	£5400
2014	£5600	£7800

He wants a loan to expand his business.
He needs to prepare a report for his bank manager.

Colin wants to display the information about his profits in his report.

(a) Draw a graph or chart for Colin.

(3)



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Colin writes this statement in his report.

'My total profit in 2014 is 40% more than my total profit in 2013'

(b) Is this statement correct?

(4)

Use the box below to show clearly how you get your answer.



A large, empty rectangular box provided for the student to show their working out and answer the question.

(Total for Question 3 is 7 marks)



P 4 5 1 8 0 A 0 7 2 0

SECTION B: Walking

Answer all questions in this section.

Write your answers in the spaces provided.

- 4 Sharon wants to get fit.
She needs to know how many steps she takes each day.
Sharon is going to buy a pedometer to count her steps.
She sees this offer.

Walks R Us

$\frac{1}{3}$ off the normal price of all pedometers

Normal price £24.99 each

Sharon is going to use a gift card for £30
She works out that she will have £13.50 left on the card.

- (a) Is Sharon correct?
Show how you get your answer. (4)

Use the box below to show clearly how you get your answer.



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Sharon needs to enter her step length into her pedometer.

She walks a distance that she knows is exactly 500 metres.
It takes her 691 steps to walk 500 metres.

Sharon uses this formula to work out her step length.

$$S = \frac{100d}{n}$$

S is the step length in centimetres
 d is the distance in metres
 n is the number of steps

(b) Work out Sharon's step length correct to the nearest centimetre.

(3)

Use the box below to show clearly how you get your answer.



(Total for Question 4 is 7 marks)



- 5 Sharon goes for a walk.
She wants to know how many calories she used on her walk.

She finds this information.

Speed (miles per hour)	Calories used per hour
2.5	204
3.0	225
3.5	259
4.0	340

Her pedometer shows this information.

Distance	9.6 km
Time	120 minutes

Sharon knows that 1 mile = 1.6 kilometres.

She works out that she used over 400 calories on her walk.

Is Sharon correct?
Show why you think this.

(6)

Use the box below to show clearly how you get your answer.



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[Empty answer box for Question 5]

(Total for Question 5 is 6 marks)



6 The table shows the number of steps that Sharon walked on 5 days last week.

Day	Number of steps
Monday	11 285
Tuesday	14 670
Wednesday	8634
Thursday	10 268
Friday	4720

Sharon aims to walk a mean average of at least 10 000 steps per day.

Did Sharon walk a mean average of at least 10 000 steps per day last week?
You must show a check of your working.

(3)

Use the box below to show clearly how you get your answer.



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Use the box below to show your check.

(Total for Question 6 is 3 marks)

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SECTION C: Arts Centre

Answer all questions in this section.

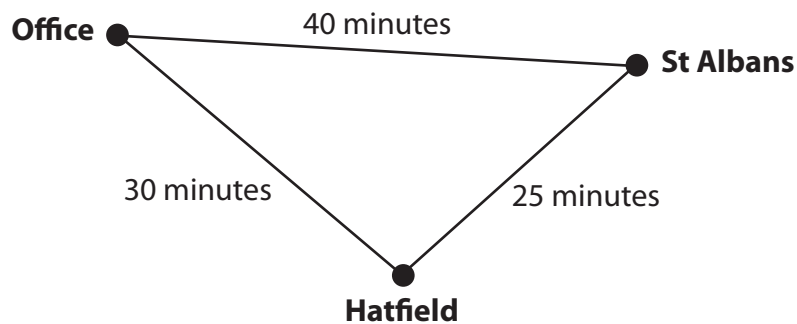
Write your answers in the spaces provided.

- 7 Jane is the manager of an Arts Centre.
She writes a list of everything she needs to do on Thursday.

Thursday

- interviews in office at 9 30 am for $1\frac{1}{2}$ hours
- meeting in St Albans at 1 pm (1 hour)
- meeting in Hatfield at 2 30 pm (45 minutes)
- paperwork in the office (at least 2 hours, can be split)
- start work at 8.30 am
- must leave the office by 5 pm
- lunch break at least 30 minutes (between 12 and 1 pm)

The diagram shows the travelling times between her office, St Albans and Hatfield.



Make a time plan for Jane for Thursday.

(4)

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Use the box to show your time plan.



(Total for Question 7 is 4 marks)

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8 Jane is going to carry out a survey to see if local people use the Arts Centre.

Jane wants to know whether people are

- under 30
- 30 and over
- male or female

Jane needs to know if they use the Arts Centre.

She needs a data collection sheet to record all the information from the survey.

Design a data collection sheet for Jane.

(3)

Use the box below for your data collection sheet.



(Total for Question 8 is 3 marks)

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9 Jane books a comedian for the Arts Centre.

Tickets for the evening cost £27.50
Jane sells 120 tickets.

The comedian gets 92% of the money from the ticket sales.

Jane works out that the comedian will get more than £3000

(a) Is Jane correct?
Show why you think this

(3)

Use the box below to show clearly how you get your answer.



Large empty rectangular box for showing the solution to the problem.



A local group are going to play at the Arts Centre.
When they book a room, the group can choose option A or option B.

Option A

Pay £24 per hour for room hire.
Keep all money from ticket sales.

Option B

No charge for room hire.
Money from ticket sales divided
in the ratio 7 : 3 between
the group and the Arts Centre.

The group will need the room for 4 hours.
They are going to charge £8 for each ticket.

The group think they will sell 90 tickets.
They want to keep as much money as possible.

(b) Should the group choose Option A or Option B?

(6)

Use the box below to show clearly how you get your answer.



Large empty box for showing the solution.

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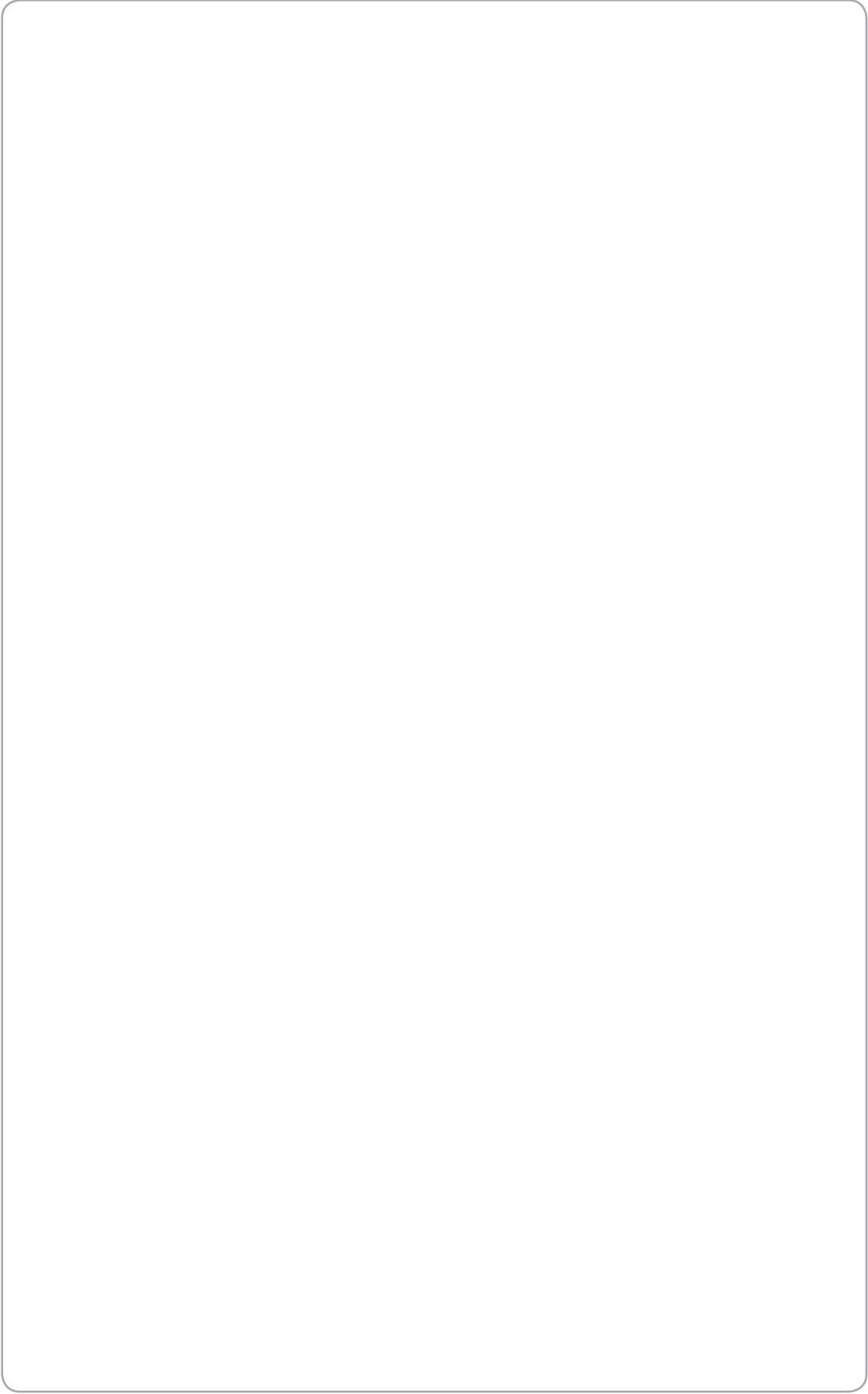
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(Total for Question 9 is 9 marks)

TOTAL FOR PAPER IS 48 MARKS



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