


Write your name here					
Surname			Other names		
<b>Edexcel</b>		Centre Number		Candidate Number	
<b>Functional Skills</b>		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<b>Mathematics</b>					
<b>Level 1</b>					
Wednesday 12 May 2010 <b>Time: 1 hour 15 minutes</b>				Paper Reference <b>FM101/01</b>	
<b>You must have:</b> Ruler graduated in centimetres and millimetres, protractor, pen, HB pencil, eraser, calculator.					Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*

### 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.*
- **Calculators may be used.**

### Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

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**TASK 1: AIRCRAFT**

**Answer all questions in this task.**

**Write your answers in the spaces provided.**



**Where you see this sign you must show clearly how you get your answers as marks may be awarded for your working out.**

- 1 Passengers can take luggage onto a plane.

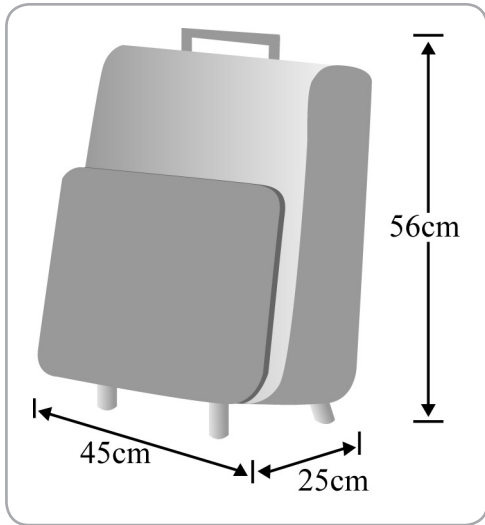


The luggage must not be bigger than the size allowed by an airline.

<b>Airline</b>	<b>Maximum Size</b>	<b>Volume</b>
Marble	50cm by 35cm by 20cm	35 litres
Fly Tim	60cm by 45cm by 20cm	54 litres
Crystal	56cm by 50cm by 25cm	70 litres
Diamond	45cm by 45cm by 30cm	60.75 litres



Jeff has a piece of luggage with dimensions 56 cm by 45 cm by 25 cm.



Which airline will allow Jeff to take this luggage onto a plane?  
Give a reason for your answer.

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 = 2 marks)



H 3 5 5 1 4 A 0 3 2 4

- 2 A flight to Italy has a **3 hour** journey time.  
The plane takes **20 minutes** to take off and reach its cruising height.  
It takes **25 minutes** to descend from the cruising height and to land.

Cabin staff can sell products to passengers only when the plane is at cruising height.

For how long can cabin staff sell products to passengers?

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



(Total for Question 2 = 3 marks)



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TURN OVER FOR QUESTION 3**



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3 Two airlines fly from East Midlands airport to Florence airport in Italy.

If a passenger's luggage weighs more than the luggage allowance, the passenger has to pay an **excess luggage charge**.

<b>MARBLE</b>
<b>Ticket Price</b> £100
<b>Luggage Allowance (kg)</b> 15
<b>Excess Luggage Charge</b> £10 per kg

<b>FLY TIM</b>
<b>Ticket Price</b> £126
<b>Luggage Allowance (kg)</b> 18
<b>Excess Luggage Charge</b> £9 per kg

The total cost for a passenger is the ticket price plus any excess luggage charge.

Carla and Clementi want to fly together from East Midlands to Florence.

Carla's luggage weighs **16kg**.

Clementi's luggage weighs **20kg**.

Advise Carla and Clementi which airline to use to fly to Florence.

Use the box below to show clearly your calculations and comparisons.



Use the box below to show clearly your calculations and comparisons.



A large empty rectangular box for writing calculations and comparisons.

**(Total for Question 3 = 7 marks)**



7  
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**TASK 2: CINEMA**

**Answer all questions in this task.**

**Write your answers in the spaces provided.**



**Where you see this sign you must show clearly how you get your answers as marks may be awarded for your working out.**

- 4 A large multi-screen cinema has the following programme for the week Friday 9th July to Thursday 15th July 2010.  
The programme shows the start times of the films and the length of each film.

<b>BRUNO (18)</b>			
<b>1h 50min</b>			
Fri–Tue	11.40	13.10	14.00
	15.30	16.30	17.50
	19.00	20.10	21.10
Wed–Thur	13.15	14.30	15.30
	16.40	17.45	19.00
	20.15	21.15	
<b>HARRY POTTER AND THE HALF BLOOD PRINCE (12A)</b>			
<b>2h 50min</b>			
Wed–Sun	11.15	12.00	13.00
	13.15	14.45	15.45
	16.30	17.15	18.15
	19.30	20.00	
<b>ICE AGE 3: DAWN OF THE DINOSAURS (U)</b>			
<b>1h 30min</b>			
Fri–Mon	11.30	12.00	14.15
	14.45	17.00	
Tue	11.30	12.00	14.15
	14.45	17.00	19.40
Wed–Thur	12.30	13.30	15.15
	16.00	18.30	19.15
	20.30		
<b>THE HANGOVER (15)</b>			
<b>2h 5min</b>			
Tue–Thur	17.00		
<b>TRANSFORMERS: REVENGE OF THE FALLEN (12A)</b>			
<b>3h</b>			
Fri–Tue	12.50	16.20	19.30
Wed–Thur	12.50	16.10	19.45





Matt wants to watch two different films on Saturday night.  
He wants to see both films from start to finish.  
He wants to arrive at the cinema after 6pm.

What films can he watch?

Use the box below to explain how you get your answer.



A large empty rectangular box for writing the answer and explanation.

(Total for Question 4 = 5 marks)



5 Simon normally goes to see two films per week.

Simon buys tickets at **£7.50** for each film.

The Cinema has a reward scheme that costs **£10** per month.

**Cinema Reward Scheme**

100 free points each month.  
70 points each time you pay to see a film.  
You can use 500 points to pay to see a film.

Is it worth Simon joining the reward scheme?

Use this box to show clearly how you get your answer.



Large empty rectangular box for writing the answer.



Use this box to show clearly how you get your answer.



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

**(Total for Question 5 = 7 marks)**



H 3 5 5 1 4 A 0 1 1 2 4

- 6 A different cinema has two screens.  
Up to 300 people can watch Screen 1.  
Up to 200 people can watch Screen 2.  
Each screen can show more than one film per day.  
Each film can be shown more than once per day.

Films can start at 1pm.  
All films must finish by 10pm.

The manager has four films to show on Sunday. The likely number of people coming to watch each film is shown in the table.

Film	Duration	People
A	3h	500
B	2h 50m	400
C	1h 30m	250
D	1h 50m	150

Each screen has a 20 minute break between showing films.

The manager needs a timetable for Sunday.  
It must show the times the films start and finish for each screen.

Make a timetable for the manager.

Use this box to show clearly how you get your answer.



Use this box to show clearly how you get your answer.



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

**(Total for Question 6 = 7 marks)**



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### TASK 3: CAR PARKS

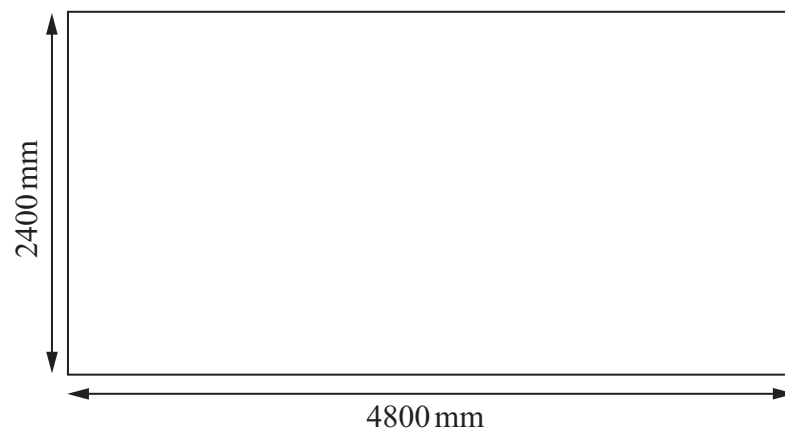
Answer all questions in this task.

Write your answers in the spaces provided.



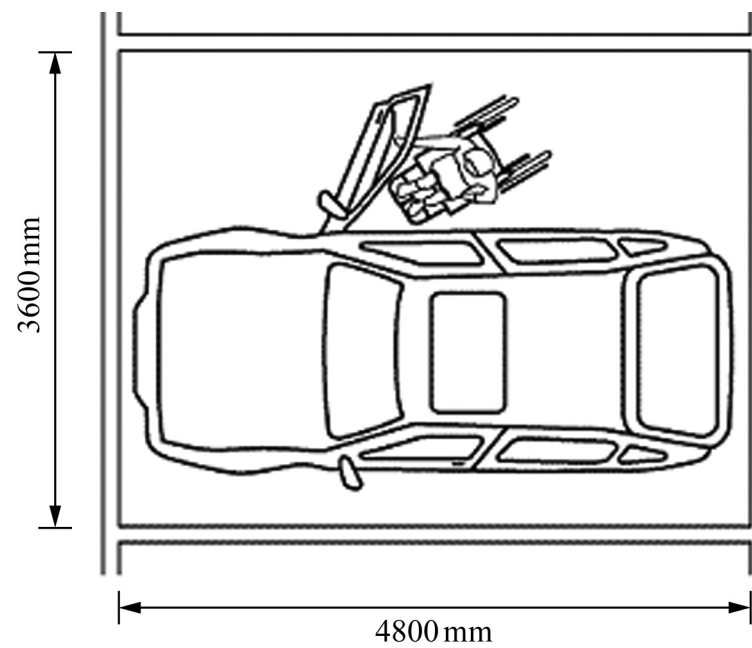
Where you see this sign you must show clearly how you get your answers as marks may be awarded for your working out.

- 7 The dimensions of the existing parking bays in St Cuthbert's city centre car park are shown below.



The owners of the car park are going to make 7 parking bays wider. Each of the bays will be large enough for wheelchair access.

The diagram below shows a plan view with recommended dimensions for wheelchair access.



The wider bays will replace some of the bays already there.

What will be the reduction in the total number of parking bays in the car park?

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



A large empty rectangular box provided for the student to show their working out.

(Total for Question 7 = 4 marks)



8 The owners of St Cuthbert's car park advertise a job.

Here are the job details.

Job Title: CAR PARK ATTENDANT

<b>Hours</b>	30 PER WEEK, MONDAY – FRIDAY, BETWEEN 9.00AM – 3.00PM		
<b>Wage</b>	NATIONAL MINIMUM WAGE	<b>National minimum wage</b>	
		<b>Age</b>	<b>Hourly Rate</b>
		16–17	£3.57
		18–21	£4.83
	22+	£5.80	
<b>Duration</b>	PERMANENT ONLY		

**Other information:**

Training and uniform provided. This job offers optional Saturday work, 7.00am – 7.00pm, at a fixed rate of £6.00 per hour.

A 25 year old will earn more money per week than a 20 year old.

How much more money?

Use this box to show clearly how you get your answer.





Use this box to show clearly how you get your answer.



A large, empty rectangular box intended for the student to show their working for the answer.

**(Total for Question 8 = 4 marks)**



H 3 5 5 1 4 A 0 1 7 2 4

- 9 St Agnes' and St Botolph's are two other car parks in the city. St Agnes' car park will have to close for repair work on Wednesday.

The table shows the average number of cars using each of the three car parks on Mondays, Wednesdays and Fridays.

	St Agnes'			St Botolph's			St Cuthbert's		
	Maximum of 250 cars			Maximum of 280 cars			Maximum of 430 cars		
	Mon	Wed	Fri	Mon	Wed	Fri	Mon	Wed	Fri
<b>8am</b>	150	150	130	190	170	170	170	180	200
<b>12 noon</b>	240	240	240	210	240	230	390	380	400
<b>4pm</b>	180	150	170	200	150	170	200	380	220
<b>8pm</b>	c l o s e d			150	130	220	130	280	150

The cars that usually park at St Agnes' will try to park at St Botolph's or St Cuthbert's.

Will St Botolph's and St Cuthbert's car parks have enough parking spaces for the extra cars on Wednesday?

Use the box below to show clearly any calculations and your answers.



Use the box below to show clearly any calculations and your answers.



A large empty rectangular box for writing calculations and answers.

**(Total for Question 9 = 4 marks)**



H 3 5 5 1 4 A 0 1 9 2 4

10 The parking costs of each car park are given below.

**St Agnes' Car Park**

Up to 1 Hour	£1.00
Up to 2 Hours	£2.00
Up to 3 Hours	£3.50
Up to 4 Hours	£5.00
Up to 5 Hours	£6.50
Day Pass	£15.00

**St Botolph's Car Park**

0 – 2 Hours	£3.00
2 – 4 Hours	£4.80
4 – 6 Hours	£5.50
6 – 12 Hours	£6.70
12 – 24 Hours	£8.00

**St Cuthbert's Car Park**

Up to 1 Hour	£1.00
Up to 2 Hours	£2.00
Up to 4 Hours	£4.60
Up to 6 Hours	£7.20
Up to 24 Hours	£8.00

The City Hospital wants to display information to help visitors compare the cost of parking at the three car parks for different lengths of stay.

Visitors to the hospital stay between 1 hour and 7 hours.

Provide City Hospital with a suitable display to help visitors compare the cost of car parking at the three car parks for different lengths of stay.



Use the box below and on page 22 and/or the graph paper on page 23 to show your display.



A large empty rectangular box for showing a display.

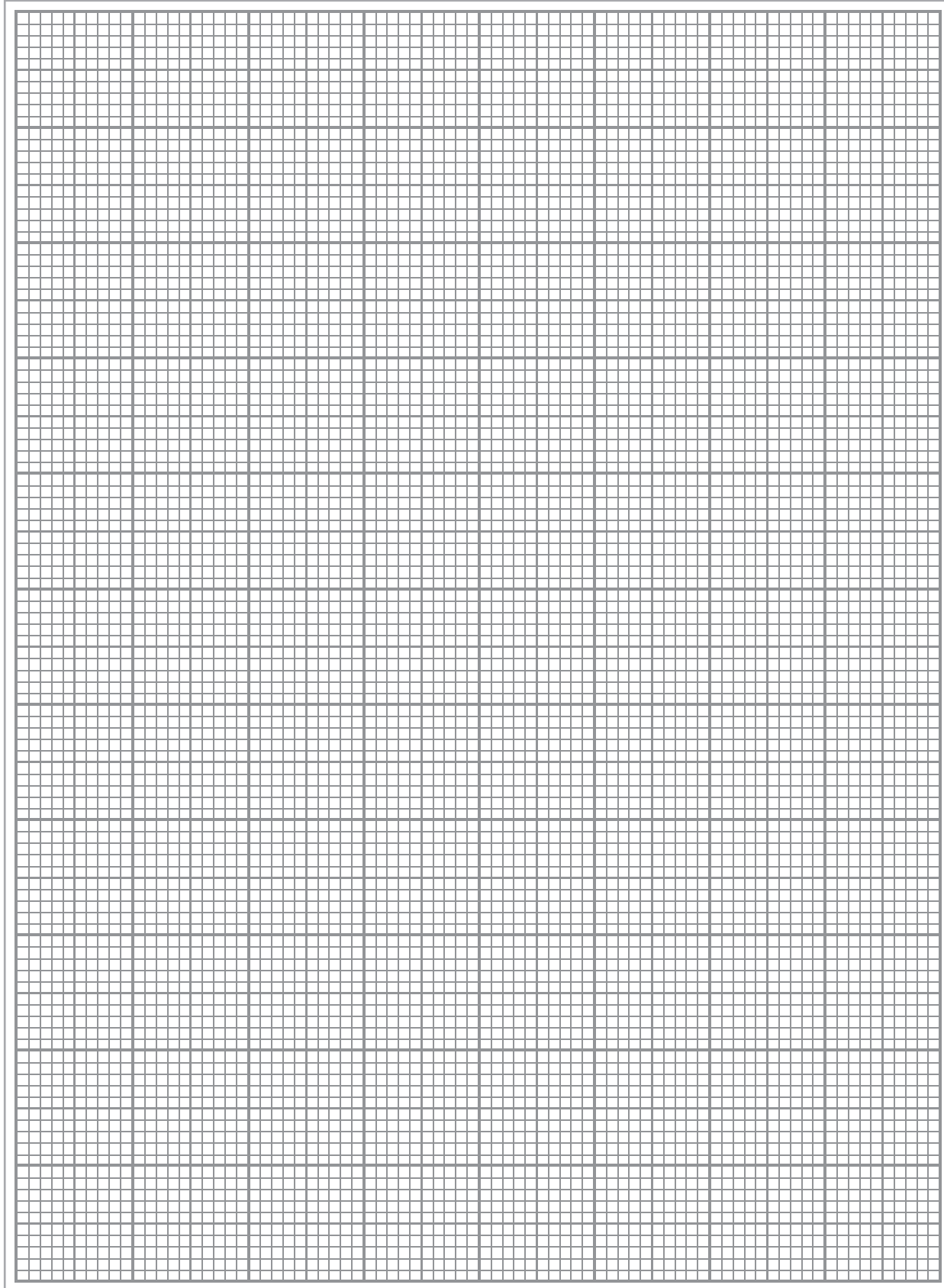


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Use the box below to show your display.



You can draw any graphs or charts on the grid below.



(Total for Question 10 = 5 marks)

**TOTAL FOR PAPER = 48 MARKS**



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