

Write your name here

Surname

Other names

Centre Number

Candidate Number

Edexcel GCSE

Applications of Mathematics

Unit 1: Applications 1

For Approved Pilot Centres ONLY

Foundation Tier

Wednesday 9 November 2011 – Afternoon

Time: 1 hour 45 minutes

Paper Reference

5AM1F/01

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

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.*
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.



Information

- The total mark for this paper is 100
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

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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Turn over ►

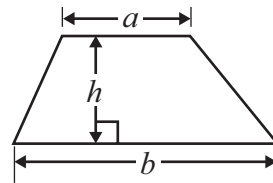
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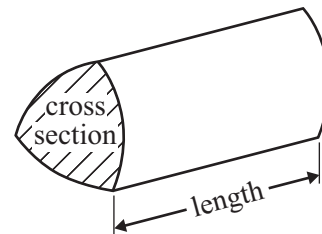
Formulae: Foundation Tier

**You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.**

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



Volume of prism = area of cross section \times length



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

- 1** Mount Everest is the highest mountain in the world.
The height, in metres, of Mount Everest is 8851 metres.

(a) Write the height of Mount Everest to the nearest hundred metres.

..... metres
(1)

The height, in feet, of Mount Everest is 29 035 feet.

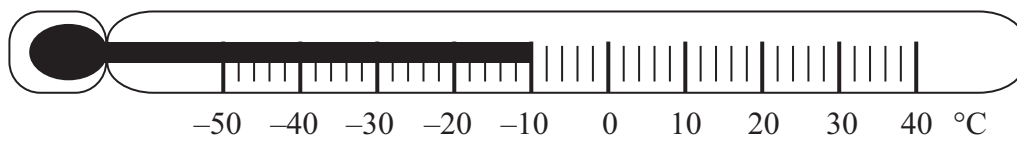
(b) Write the height of Mount Everest to the nearest thousand feet.

..... feet
(1)

(Total for Question 1 is 2 marks)

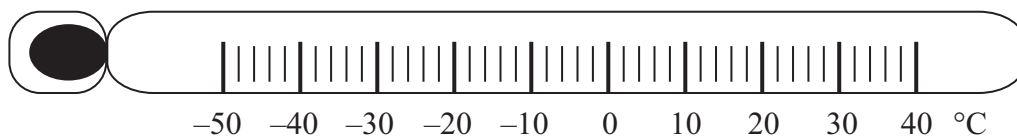


2 (a) What temperature is shown on this thermometer?



..... °C
(1)

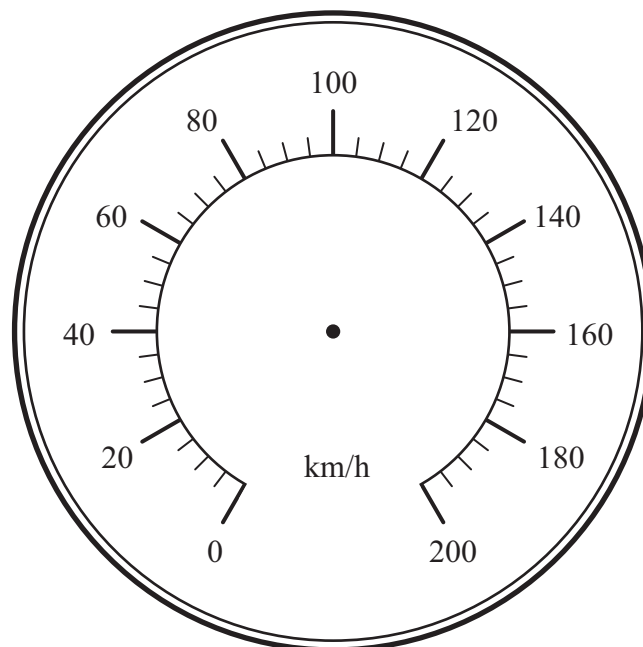
(b) On the thermometer below, draw an arrow (↓) to show a temperature of 24°C.



(1)

This is a picture of a speedometer.

(c) Draw an arrow to show a speed of 75 km/h.



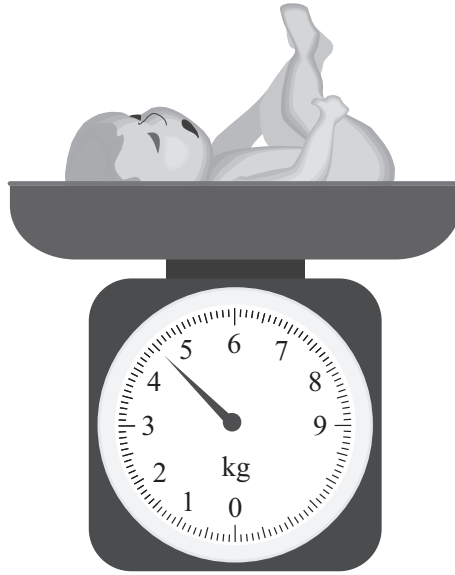
(1)

(Total for Question 2 is 3 marks)



- 3 Angela's baby weighed 4.5 kg at birth.
At three months old, the baby weighed 7.35 kg.

Work out the increase in the baby's weight in grams.

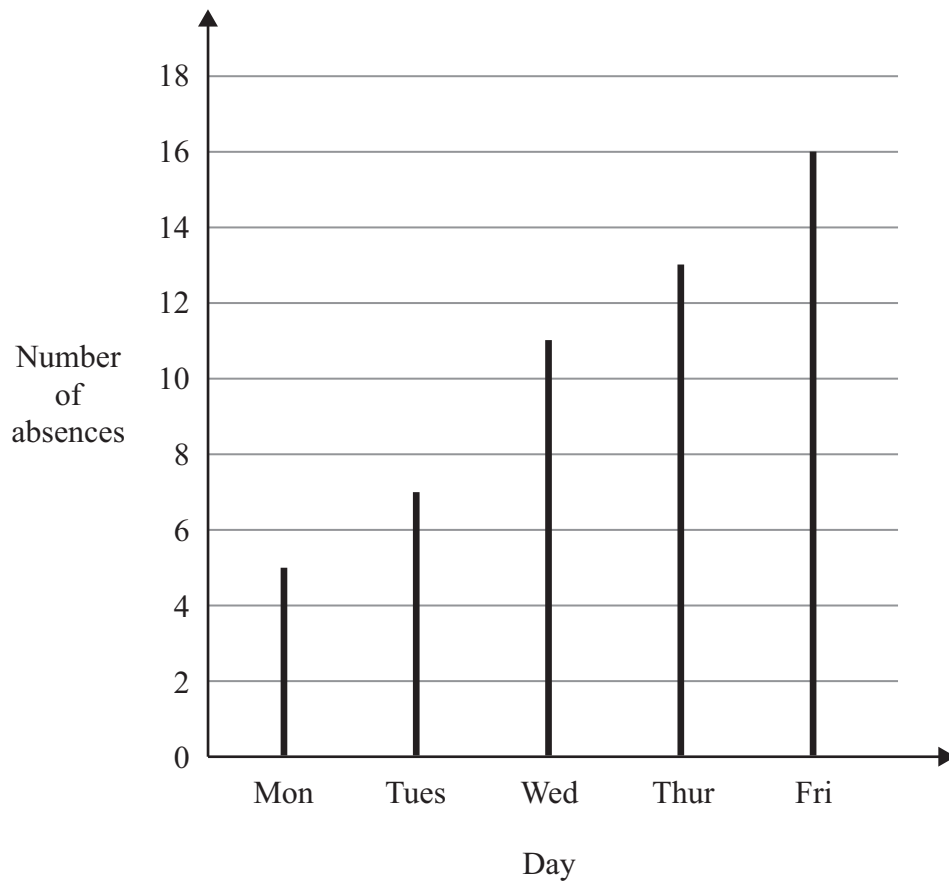


..... grams

(Total for Question 3 is 3 marks)



- 4 The graph gives information about the number of absences each day in a school for one week.



- (a) Write down the number of absences on Monday.

.....
(1)

On one day there were 13 absences.

- (b) Which day?

.....
(1)

- (c) Work out the total number of absences that week.

.....
(2)



(d) Describe the change in the number of absences from Monday to Friday.

.....
.....

(1)

(Total for Question 4 is 5 marks)

5 Debra bought a new fridge.
The fridge cost £200

Debra paid £50 when she bought the fridge.
She paid the rest of the money in 12 equal monthly payments.

Work out how much Debra paid each month.

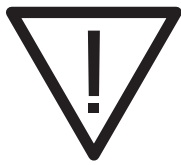
£

(Total for Question 5 is 4 marks)



6 Here are some symbols found on packaging.

(a) Write down the number of lines of symmetry of each symbol.



.....



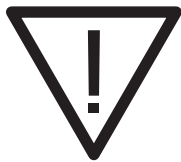
.....



.....

(2)

(b) (i) Put a tick (✓) under the symbol that has rotational symmetry.



.....



.....



.....

(ii) Write down the order of rotational symmetry of this symbol.

.....

(2)

(Total for Question 6 is 4 marks)



7 Priyesh has 12 square paving stones.
He will use all the stones to make a patio that is a rectangle.

(a) Draw a diagram to show how Priyesh can use these stones to make a patio that is a rectangle.

(2)

(b) The diagram shows a pond with a path around it.

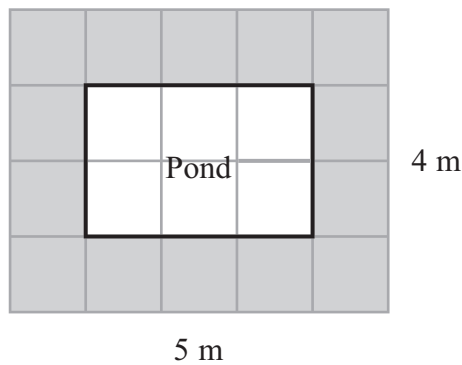


Diagram **NOT**
accurately drawn

(i) Work out the perimeter of the pond.

..... m

(ii) Work out the area of the path.

.....

(3)

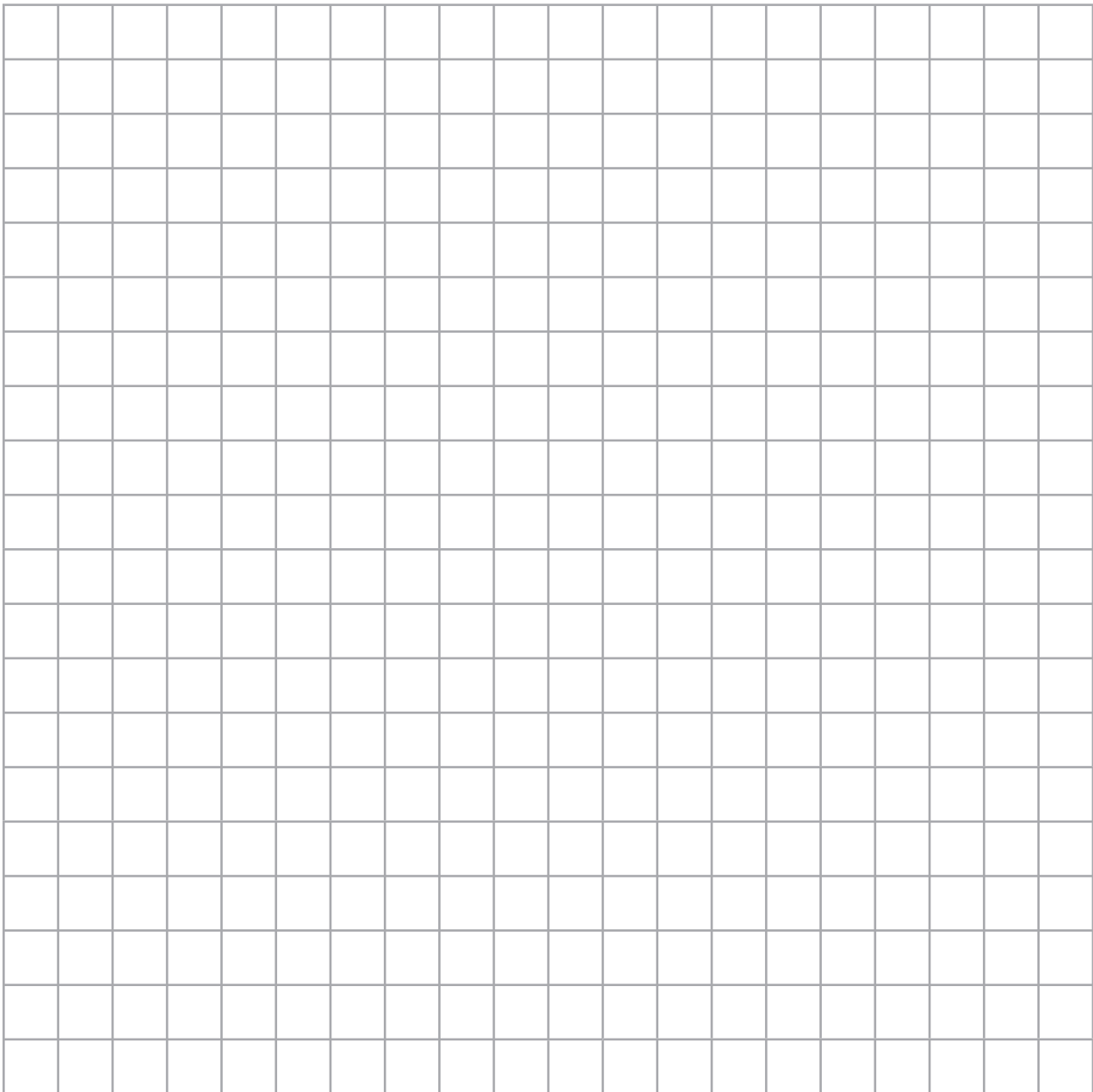
(Total for Question 7 is 5 marks)



*8 The table shows how much protein, fat, fibre and salt women and men need each day.

	Women	Men
Protein	45 g	55 g
Fat	70 g	95 g
Fibre	25 g	25 g
Salt	5 g	5 g

Show this information in a suitable chart or diagram.



(Total for Question 8 is 4 marks)



P 4 0 6 0 6 A 0 1 1 2 8

*9 The table shows the numbers of passengers, in millions, using five airports in 2005 and 2006.

	Number of passengers (millions)	
	2005	2006
Belfast	4.9	4.8
Bristol	5.5	5.2
Glasgow	9.2	8.8
Heathrow	66.5	67.7
Manchester	21.7	22.1

In which year were there more passengers in total using these airports?

(Total for Question 9 is 3 marks)



10 The table shows the distances, in kilometres, between some towns and cities in France.

Bordeaux					
879	Calais				
761	574	Dijon			
433	419	476	Le Mans		
582	294	312	204	Paris	
349	534	416	88	237	Tours

(a) Write down the distance between Bordeaux and Le Mans.

..... km
(1)

(b) Write down the name of the nearest town or city to Le Mans.

.....
(1)

Fiona is on holiday in France.
She drives from Calais to Paris.
She then drives from Paris to Dijon.

(c) Work out the total distance Fiona drives.

..... km
(2)

(Total for Question 10 is 4 marks)



11 This table shows the opening times of a swimming pool.

Opening Times	
Monday to Friday	7 am to 9.30 pm
Saturday and Sunday	8.30 am to 5.30 pm
Last entry to swimming pool 30 minutes before closing	

George wants to go for a swim on Wednesday evening.
It takes him 15 minutes to get from his home to the swimming pool.

(a) What is the latest time he can leave home?

.....
(2)

This table shows the ticket prices for the swimming pool.

Prices	
Adult, 17 – 59 years	£3.30
Senior Citizen, 60 years or older	Free
Junior, 5 – 16 years	£2.50
Infant, 4 years and younger	Free



On Saturday, George pays for himself, his wife, his father and his two children to go swimming.

George is 40 years old.

His wife is 37 years old.

His father is 67 years old.

George's two children are 4 years old and 9 years old.

George pays with a £20 note.

(b) How much change should George get?

£
(3)

Gwen and Patrick both work at the swimming pool.

Gwen works from 6 pm to 9.30 pm from Monday to Friday each week.
She earns £6.80 per hour.

Patrick works on Saturdays and Sundays.

He works from 8.30 am to 12.30 pm and from 1.30 pm to 5.30 pm.
He earns £7.50 per hour.

* (c) Who earns the most money each week?

You must show clearly how you got your answer.

(5)

(Total for Question 11 is 10 marks)



12 Rob buys a packet of pepper seeds.

The table shows the months when Rob can plant his pepper seeds.
It also shows the months when Rob can pick the peppers.

Month	J	F	M	A	M	J	J	A	S	O	N	D
Plant	✓	✓	✓	✓								
Pick						✓	✓	✓	✓	✓		

(a) Write down the latest month Rob should plant his pepper seeds.

.....
(1)

(b) For how many months can Rob pick the peppers?

.....
(1)

(c) The packet of pepper seeds costs £1.99

Rob also buys some plant pots and some compost for the pepper seeds.

The bill shows the total cost of growing the peppers.

(i) Complete the bill.

Greenfingers Garden Centre			
Description	Number	Cost of each item	Total
Packet of seeds	1	£1.99	£1.99
Small plant pots	6	75p	£
Large plant pots	2	£	£6.98
Bag of compost	1	£5.95	£
		Total	£



Rob got 28 peppers from his plants.
In a shop, one pepper costs 65p.

- (ii) Was it cheaper for Rob to grow the 28 peppers or to buy 28 peppers from the shop?
You must show clearly how you got your answer.

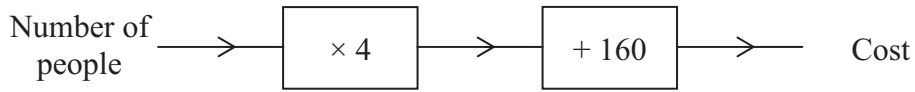
(6)

(Total for Question 12 is 8 marks)



13 Nathalie is organising a conference for a number of people.
She is going to use the Grange Hotel.

Nathalie uses this number machine to work out the cost in pounds.



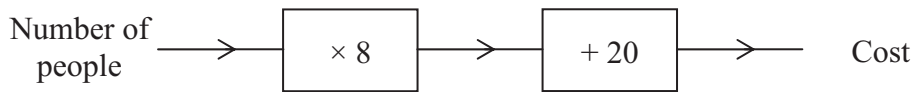
There will be 30 people at the conference.

(a) Work out the cost.

£
(2)

Nathalie is also organising a conference at the Bellevue Hotel.

She uses this number machine to work out the cost in pounds.



The cost is £356

(b) Work out the number of people at this conference.

.....
(3)



Nathalie is organising another conference.

The costs at the Grange Hotel and the Bellevue Hotel are the same for this conference.

(c) How many people will be at this conference?

.....
(4)

(Total for Question 13 is 9 marks)

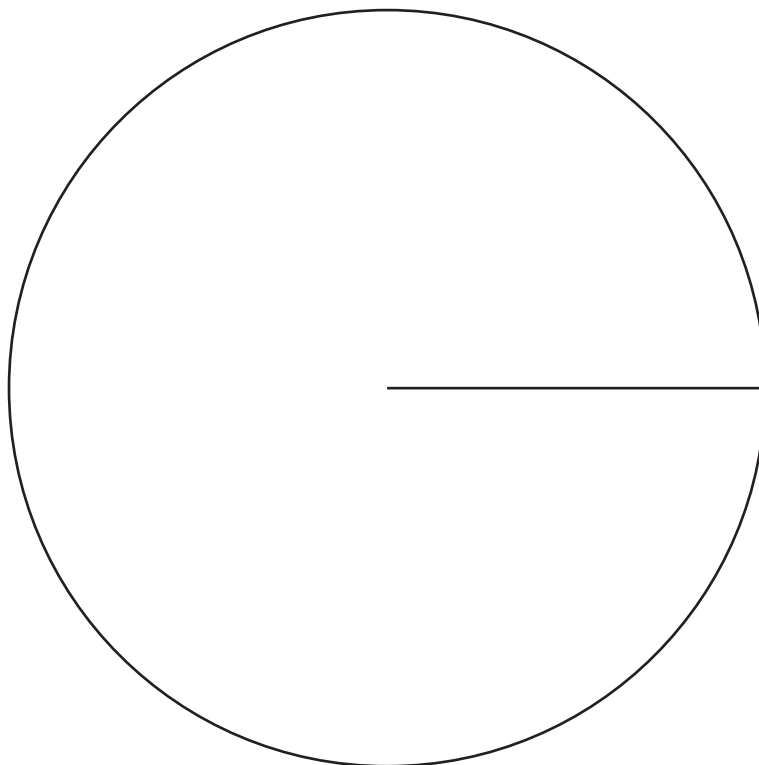


14 Marcus asked 40 people if they will vote in a local election.

The table shows his results.

Response	Frequency	
Yes	25	
No	11	
Don't know	4	

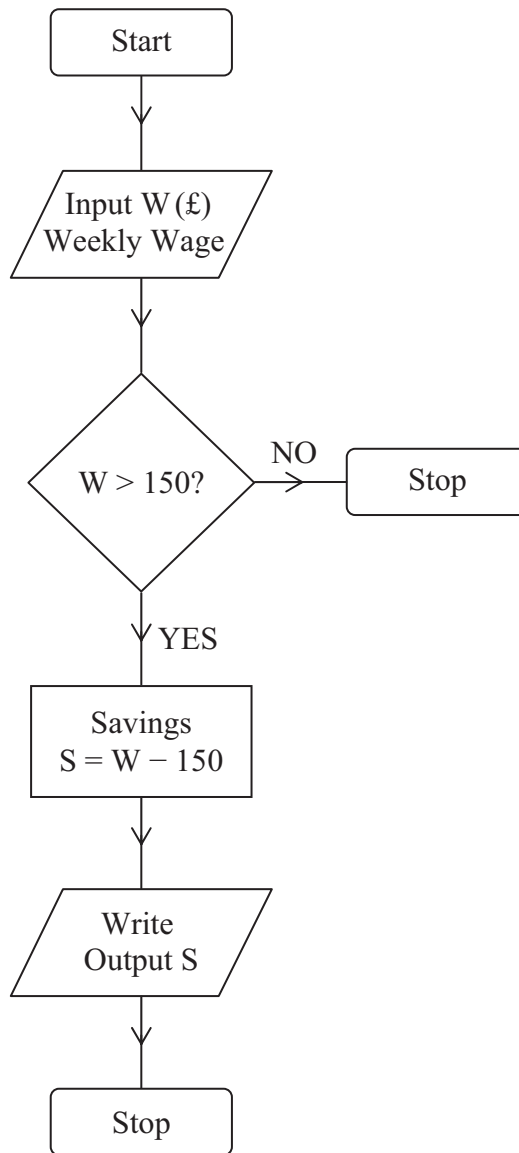
Draw an accurate pie chart to show this information.



(Total for Question 14 is 4 marks)



15 Samina uses this flow chart to work out how much money she can save each week.



One week Samina's wage was £187.50

(i) Write down the Input W.

£

(ii) Work out the Output S.

£

(Total for Question 15 is 2 marks)



16 The table shows some information about the average adult spending in 2008 as a percentage of average **total** adult spending in 2008.

Item	Percentage
food	11%
housing	11%
leisure	13%
clothes	5%
transport	14%
household goods	8%
other items	.....

(a) Complete the table to show the percentage spending on other items.

(2)

In May 2008, Katie spent a total of £425
She spent £48.45 of the £425 on food.

*(b) Compare the percentage that Katie spent on food with the average adult spending on food.

(3)

(Total for Question 16 is 5 marks)



17 Here is some information about the 20 people at a party.

Name	Gender	Age in years
Ray	male	72
Peter	male	75
Simon	male	48
Alison	female	47
Shan	female	45
Steven	male	49
Daniel	male	17
Amelia	female	14
Jenny	female	67
Hylton	male	69

Name	Gender	Age in years
Mark	male	48
Tracy	female	46
James	male	13
Wendy	female	58
John	male	58
Derek	male	57
Daniela	female	48
Steve	male	58
Ann	female	56
Peter	male	51

(a) Complete the two-way table.

	less than 18 years	18 – 64 years	65 years and older	Total
Male				
Female				
Total				

(3)

(b) What proportion of the 20 people at the party are male **and** 65 years or older?

.....
(2)

(Total for Question 17 is 5 marks)



18 (a)

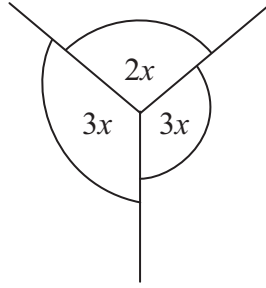


Diagram **NOT** accurately drawn

Find the value of x .

.....
(2)

(b)

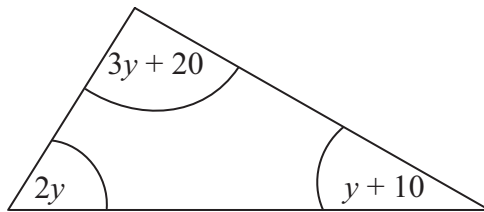


Diagram **NOT** accurately drawn

(i) Find an expression, in terms of y , for the sum of the three angles in the triangle. Simplify your expression.

.....

(ii) Find y .

$y =$
(4)

(Total for Question 18 is 6 marks)



19 Last week, Imran's pay was £208
This week his pay is 5% more than last week.
Work out Imran's pay this week.

£

(Total for Question 19 is 3 marks)



20 Here is a list of ingredients for making a Cheese Soufflé.

Cheese Soufflé	
3	eggs
1	oz butter
$\frac{1}{2}$	oz flour
$\frac{1}{4}$	pint milk
3	oz grated cheese

Imperial Units	=	Metric Units
1 oz	=	28 g
1 pint	=	568 ml

(a) Complete the list of ingredients using metric units.

Cheese Soufflé	
3	..... eggs
.....	..... g butter
.....	..... g flour
.....	..... m/ milk
.....	..... g grated cheese

(2)

Jemma wants to make 12 Cheese Soufflés.

(b) Work out how much milk she will need.

Give your answer in litres.

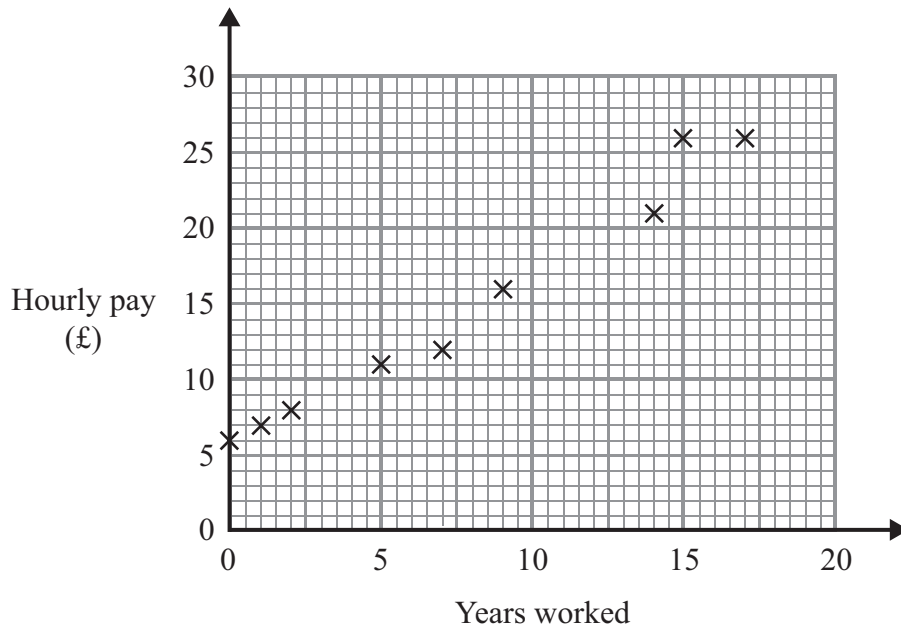
..... litres

(2)

(Total for Question 20 is 4 marks)



- 21 The scatter graph shows some information about 9 people who work for a company. It shows the number of years each person has worked. It also shows each person's hourly pay in pounds.



Sara has worked for the company for 10 years.
Her hourly pay is £19

- (a) Show this information on the graph.

(1)

- (b) Draw a line of best fit on the graph.

(1)

- (c) Describe the relationship this scatter graph shows.

(1)

(Total for Question 21 is 3 marks)



22 James is going to cover a rectangular floor with flooring.
The floor has a length of 6 m.
It has a width of 4.5 m.

Flooring is sold in packs.
One pack of flooring covers an area of 1.44 m².
Each pack costs £12.87

James buys the least number of packs so that he has enough flooring to cover the floor.
Work out how much money James pays for the flooring.

£

(Total for Question 22 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

