2 Katy invests £200 000 in a savings account for 4 years.
The account pays compound interest at a rate of 1.5 % per annum.

Calculate the total amount of interest Katy will get at the end of 4 years.

KZ2A

£.....

(Total for Question 2 is 3 marks)

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10 Marie invests £8000 in an account for one year.
At the end of the year, interest is added to her account.

Marie pays tax on this interest at a rate of 20%
She pays £28.80 tax.

Work out the percentage interest rate for the account.

KZ10A

.....%

(Total for Question 10 is 3 marks)

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9

V n

V n

BM9A

(2)

R

R

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(Total for Question 9 is 5 marks)

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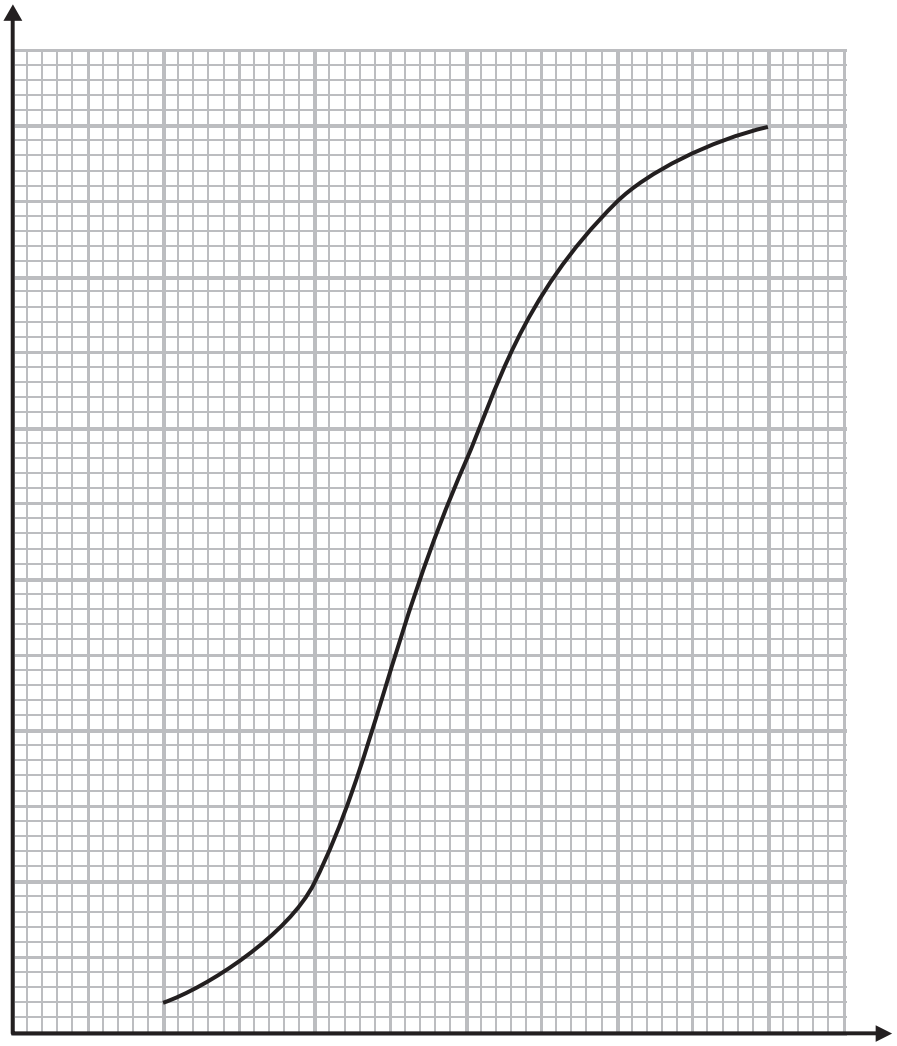
11

BM11A



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(Total for Question 11 is 4 marks)

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4 Daniel bakes 420 cakes.
He bakes only vanilla cakes, banana cakes, lemon cakes and chocolate cakes.

BP4A

$\frac{2}{7}$ of the cakes are vanilla cakes.

35% of the cakes are banana cakes.

The ratio of the number of lemon cakes to the number of chocolate cakes is 4 : 5

Work out the number of lemon cakes Daniel bakes.

.....

(Total for Question 4 is 5 marks)

Chris says,

"The box plots show that the female students spent more money than the male students."

(c) Is Chris correct?
Give a reason for your answer.

.....

.....

.....

.....

(1)

(Total for Question 9 is 5 marks)

10 Naoby invests £6000 for 5 years.
The investment gets compound interest of x% per annum.

At the end of 5 years the investment is worth £8029.35

Work out the value of x.

BP10A

.....

(Total for Question 10 is 3 marks)

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5 The points L, M and N are such that LMN is a straight line.

The coordinates of L are $(-3, 1)$

The coordinates of M are $(4, 9)$

Given that $LM : MN = 2 : 3$,

find the coordinates of N.

PE5A

(..... , ...)

(Total for Question 5 is 4 marks)

6 A new phone cost £679
The value of the phone decreases at a rate of 4% per year.

Work out the value of the phone at the end of 3 years.

PE6A

£.....

(Total for Question 6 is 3 marks)

4 Jo is going to buy 15 rolls of wallpaper.

Here is some information about the cost of rolls of wallpaper from each of two shops.

Chic Decor	**Style Papers**
3 rolls for £36	Pack of 5 rolls normal price £70 12% off the normal price

Jo wants to buy the 15 rolls of wallpaper as cheaply as possible.

Should Jo buy the wallpaper from Chic Decor or from Style Papers?
You must show how you get your answer.

PF4A

(Total for Question 4 is 4 marks)

PF10A

10 Jane bought a new car three years ago.

At the end of the first year the value of the car had decreased by 12.5%
The value of the car then decreased by 10% each year for the next two years.

At the end of the three years, the value of the car was £17 010

Work out the value of the car when Jane bought it three years ago.

£.....

(Total for Question 10 is 3 marks)

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PL6A

6 Last year a family recycled 800 kg of household waste.
57% of this waste was paper and glass.

weight of paper recycled : weight of glass recycled = 12 : 7

Calculate the weight of glass the family recycled.

..... kg

(Total for Question 6 is 3 marks)

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DO NOT WRITE IN THIS AREA

7 A number, d, is rounded to 1 decimal place.
The result is 12.7

Complete the error interval for d.

PL7A

..... $\leqslant d <$ .....

(Total for Question 7 is 2 marks)

8 Tamsin buys a house with a value of £150 000
The value of Tamsin's house increases by 4% each year.

Rachel buys a house with a value of £160 000
The value of Rachel's house increases by 1.5% each year.

At the end of 2 years, whose house has the greater value?
You must show how you get your answer.

PL8A

(Total for Question 8 is 4 marks)

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PM2A

2 Jonny wants to know how much coffee he will need for 800 people at a meeting.

Each person who drinks coffee will drink 2 cups of cof fee.
10.6 g of coffee is needed for each cup of cof fee.

Jonny assumes 68% of the people will drink cof fee.

(a) Using this assumption, work out the amount of cof fee Jonny needs.
Give your answer correct to the nearest gram.

..... g

(4)

Jonny's assumption is wrong.
72% of the people will drink coffee.

(b) How does this affect your answer to part (a)?

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.....

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(1)

(Total for Question 2 is 5 marks)

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8 A solid cuboid is made of metal.

The metal has a density of 9 g/cm^3
The volume of the cuboid is 72 cm^3

Work out the mass of the cuboid.

PM8A

..... g

(Total for Question 8 is 2 marks)

9 Some people were asked if they wanted a new television.

70% of the people said yes.
80% of the people who said yes wanted a television with a large screen.

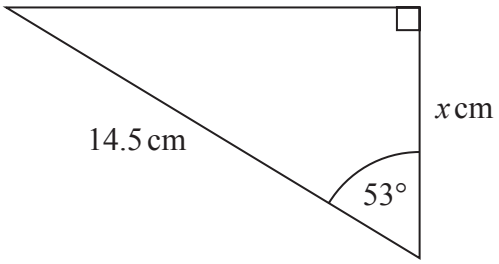
What percentage of the people asked said they wanted a television with a large screen?

PM9A

..... %

(Total for Question 9 is 2 marks)

5



PH5A

Work out the value of x.
Give your answer correct to 3 significant figures.

$x =$ .....

(Total for Question 5 is 2 marks)

6 Ella invests £7000 for 2 years in an account paying compound interest.

In the first year, the rate of interest is 3%
In the second year, the rate of interest is 1.5%

Work out the value of Ella's investment at the end of 2 years.

PH6A

£.....

(Total for Question 6 is 3 marks)

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8 Chanda buys a necklace for £120
She sells the necklace for £135

Work out her percentage profit.

PH8A

.....%

(Total for Question 8 is 3 marks)

9 Here are the equations of two straight lines.

$$y = \frac{1}{2}x - 6 \qquad 6y = 3x + 7$$

PH9A

Oscar says that these lines are parallel.

Is Oscar correct?
You must give a reason for your answer.

.....

.....

.....

(Total for Question 9 is 2 marks)

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10 Aaliyah bought a car.

In the first year after she bought the car , its value depreciated at a rate of 23% per annum.
In the second year after she bought the car , its value depreciated at a rate of 19% per annum.

At the end of the second year the car was worth £10 914.75

What was the value of the car when Aaliyah bought it?

PH10A

£.....

(Total for Question 10 is 3 marks)

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17 There are four boxes on a shelf, **A**, **B**, **C** and **D**.

The total weight of **A** and **B** is 3 times the total weight of **C** and **D**.

The weight of **A** is $\frac{2}{3}$ of the weight of **B**.

The weight of **C** is 75% of the weight of **D**.

Find the ratio

weight of **A** : weight of **B** : weight of **C** : weight of **D**

PJ17A

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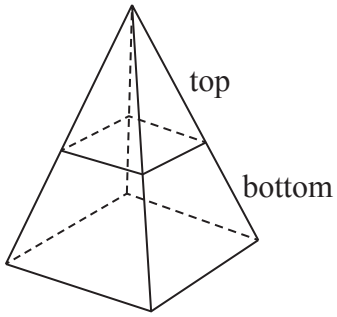
.....

(Total for Question 17 is 4 marks)

25 The pyramid **P** is formed from two parts made of different materials.

PJ25A



The top part of **P** has a mass of 92.8 g and is made from material with a density of 2.9 g/cm^3
The bottom part of **P** has a mass of 972.8 g
The average density of **P** is 4.7 g/cm^3

Calculate the volume of the top part of **P** as a percentage of the total volume of **P**.
Give your answer correct to 1 decimal place.
You must show all your working.

.....%

(Total for Question 25 is 5 marks)

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3 Andrew invests £4500 in a savings account for 2 years.
The account pays compound interest at a rate of 3.4% per year.

Calculate how much Andrew has in this savings account at the end of the 2 years.

PP3A

£.....

(Total for Question 3 is 2 marks)

4 Solve $5x - 14 = 52 - x$

PP4A

$x =$ .....

(Total for Question 4 is 3 marks)

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4 Raya buys a van for £8500 plus VAT at 20%

BI4A

Raya pays a deposit for the van.
She then pays the rest of the cost in 12 equal payments of £531.25 each month.

Find the ratio of the deposit Raya pays to the total of the 12 equal payments.
Give your answer in its simplest form.

.....

(Total for Question 4 is 5 marks)

(c) Use your graph to find estimates of the solutions to the equation $x^2 - x - 6 = -2$

.....

(2)

(Total for Question 5 is 6 marks)

6 A force of 70 newtons acts on an area of 20 cm^2

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

BI6A

The force is increased by 10 newtons.
The area is increased by 10 cm^2

Helen says,

"The pressure decreases by less than 20%"

Is Helen correct?
You must show how you get your answer.

(Total for Question 6 is 3 marks)

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9 Jean invests £12 000 in an account paying compound interest for 2 years.

BI9A

In the first year the rate of interest is $x\%$
At the end of the first year the value of Jean's investment is £12 336

In the second year the rate of interest is $\frac{x}{2}\%$

What is the value of Jean's investment at the end of 2 years?

£.....

(Total for Question 9 is 4 marks)

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4 Northern Bank has two types of account.
Both accounts pay compound interest.

BF4A

Cash savings account
Interest
2.5% per annum

Shares account
Interest
3.5% per annum

Ali invests £2000 in the cash savings account.
Ben invests £1600 in the shares account.

(a) Work out who will get the most interest by the end of 3 years.
You must show all your working.

(4)

In the 3rd year the rate of interest for the shares account is changed to 4% per annum.

(b) Does this affect who will get the most interest by the end of 3 years?
Give a reason for your answer.

.....

.....

.....

(1)

(Total for Question 4 is 5 marks)

10 Robert makes 50 litres of green paint by mixing litres of yellow paint and litres of blue paint in the ratio 2 : 3

BF10A

Yellow paint is sold in 5 litre tins.
Each tin of yellow paint costs £26

Blue paint is sold in 10 litre tins.
Each tin of blue paint costs £48

Robert sells all the green paint he makes in 10 litre tins.
He sells each tin of green paint for £66.96

Work out Robert's percentage profit on each tin of green paint he sells.

.....%

(Total for Question 10 is 5 marks)

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9 $T = \sqrt{\frac{w}{d^3}}$

$w = 5.6 \times 10^{-5}$
$d = 1.4 \times 10^{-4}$

(a) Work out the value of T.
Give your answer in standard form correct to 3 significant figures.

$T =$ .....

(2)

w is increased by 10%
d is increased by 5%

Lottie says,

"The value of T will increase because both w and d are increased."

(b) Lottie is wrong.
Explain why.

.....

.....

(2)

(Total for Question 9 is 4 marks)

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BJ11A

11 In 2003, Jerry bought a house.

In 2007, Jerry sold the house to Mia.
He made a profit of 20%

In 2012, Mia sold the house for £162 000
She made a loss of 10%

Work out how much Jerry paid for the house in 2003

£.....

(Total for Question 11 is 3 marks)

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 (a) Write 7357 correct to 3 significant figures.

BG1A

.....

(1)

(b) Work out $\dfrac{\sqrt{17 + 4^2}}{7.3^2}$

Write down all the figures on your calculator display.

.....

(2)

(Total for Question 1 is 3 marks)

2 Last year Jo paid £245 for her car insurance.
This year she has to pay £883 for her car insurance.

Work out the percentage increase in the cost of her car insurance.

BG2A

.....%

(Total for Question 2 is 3 marks)

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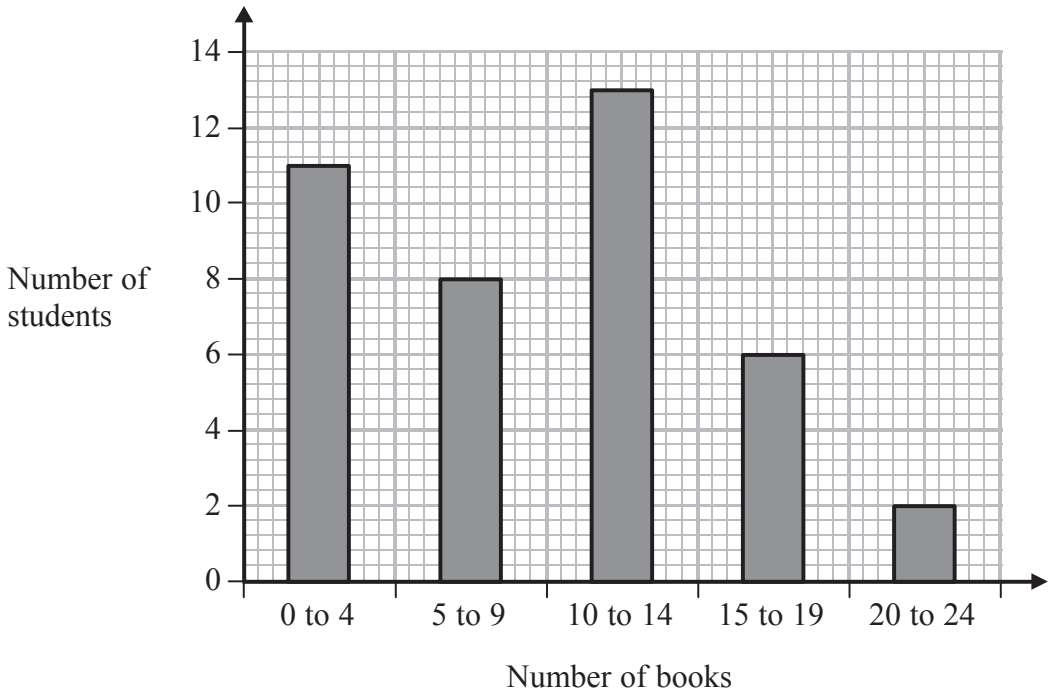
4 Fran asks each of 40 students how many books they bought last year.

The chart below shows information about the number of books bought by each of the 40 students.

BG4A



(a) Work out the percentage of these students who bought 20 or more books.

.....%

(2)

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(b) Show that an estimate for the mean number of books bought is 9.5
You must show all your working.

(4)

(Total for Question 4 is 6 marks)

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2 On Saturday, some adults and some children were in a theatre.
The ratio of the number of adults to the number of children was 5 : 2

BO2A

Each person had a seat in the Circle or had a seat in the Stalls.

$\frac{3}{4}$ of the children had seats in the Stalls.
117 children had seats in the Circle.

There are exactly 2600 seats in the theatre.

On this Saturday, were there people on more than 60% of the seats?
You must show how you get your answer.

(Total for Question 2 is 5 marks)

6 Anil wants to invest £25 000 for 3 years in a bank.

Personal Bank	**Secure Bank**
Compound Interest	Compound Interest
2% for each year	4.3% for the first year 0.9% for each extra year

Which bank will give Anil the most interest at the end of 3 years?
You must show all your working.

BO6A

(Total for Question 6 is 3 marks)

7 A number, n, is rounded to 2 decimal places.
The result is 4.76

Using inequalities, write down the error interval for n.

BO7A

.....

(Total for Question 7 is 2 marks)

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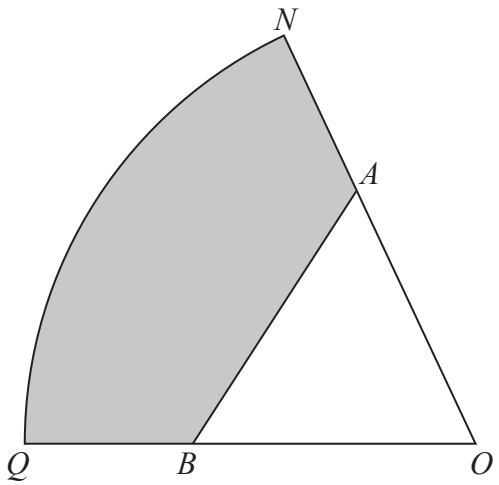
17

BO17A



ONQ is a sector of a circle with centre *O* and radius 11 cm.

A is the point on *ON* and *B* is the point on *OQ* such that *AOB* is an equilateral triangle of side 7 cm.

Calculate the area of the shaded region as a percentage of the area of the sector *ONQ*.
Give your answer correct to 1 decimal place.

.....%

(Total for Question 17 is 5 marks)

9 The circumference of circle **B** is 90% of the circumference of circle **A**.

KY9A

(a) Find the ratio of the area of circle **A** to the area of circle **B**.

.....

(2)

Square **E** has sides of length e cm.
Square **F** has sides of length f cm.

The area of square **E** is 44% greater than the area of square **F**.

(b) Work out the ratio $e : f$

.....

(2)

(Total for Question 9 is 4 marks)

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11 The grouped frequency table gives information about the times, in minutes, that 80 office workers take to get to work.

Time (t minutes)	Frequency
$0 < t \leqslant 20$	5
$20 < t \leqslant 40$	30
$40 < t \leqslant 60$	20
$60 < t \leqslant 80$	15
$80 < t \leqslant 100$	8
$100 < t \leqslant 120$	2

KY11A

(a) Complete the cumulative frequency table.

Time (t minutes)	Cumulative frequency
$0 < t \leqslant 20$	
$0 < t \leqslant 40$	
$0 < t \leqslant 60$	
$0 < t \leqslant 80$	
$0 < t \leqslant 100$	
$0 < t \leqslant 120$	

(1)

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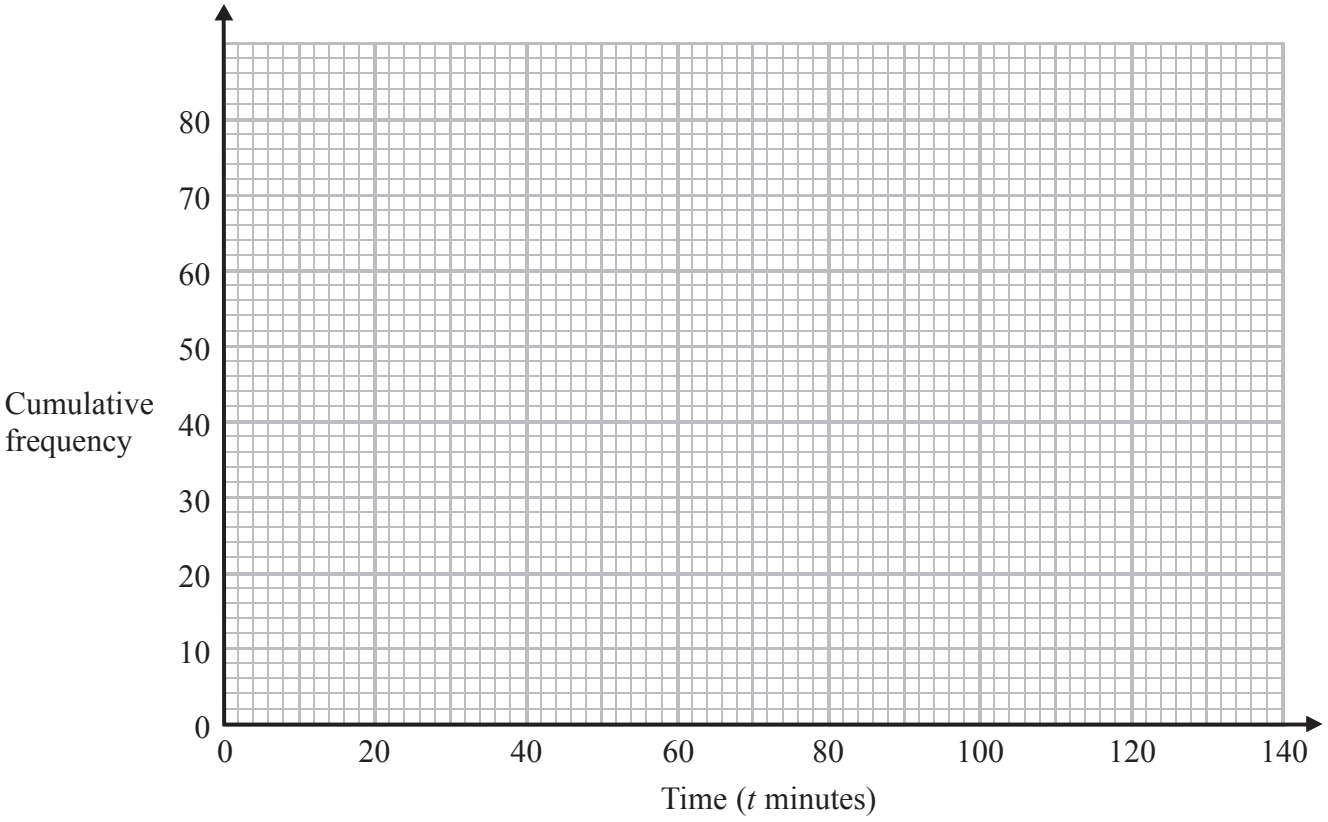
(b) On the grid, draw the cumulative frequency graph for this information.



(2)

(c) Use your graph to find an estimate for the percentage of these office workers who take more than 90 minutes to get to work.

.....%

(3)

(Total for Question 11 is 6 marks)

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13

BL13A

(2)

x

x

(3)

(Total for Question 13 is 5 marks)

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