



3rd Form Entrance Examination

English

Practice Paper

Time Allowed: 1 hour

- ◆ Section 1 - Practice Writing Tasks
- ◆ Section 2 - Practice Reading Task

Practice Writing Tasks

These may take a variety of forms but typical examples are provided below:

You are a pupil on the school council. You receive this note from the Headmaster:

I have been sent a letter by an elderly lady who lives near the school. She has complained about the behaviour of pupils leaving the site at lunch time and after school. She says they talk too loudly, kick footballs around and eat too many sweets.

I have already replied to her letter to explain that the pupils here are well behaved, but I think it would help if she received a letter from you as well.

Please would you try to persuade her to come into school and see for herself that you and your friends are a well-mannered and well behaved bunch? You could also tell her about some of the things you and your friends do to contribute to the local community.

Write a letter to the elderly lady, PERSUADING her that pupils at your school are well behaved and inviting her to visit so that she can see this for herself.

In your planning, consider:

- Why do you think pupils at your school are well behaved?
- What examples could you give of good behaviour?
- How many pupils at your school make a positive contribution to the local community?
- Why should the elderly lady visit your school?

OR

You are a member of a local youth club. Your club has received money to create a relaxation area and is running a competition to decide what it will be like. The poster advertising the competition says:

Have you got a winning idea?

You're about to get a new relaxation area, but we need ideas for what it should be like!

Tell us what you think we should put in this area and why.

The best idea will become reality, so give us some tempting details!

Write an entry for the competition, DESCRIBING the new relaxation area you would like to see and why.

Pupils will only have to write one essay and will be allocated 30 minutes for this.

Practice Reading Tasks

The Romanovs were executed in the cellar of a house in the Russian countryside in July 1918. The bodies of Czar Nicholas II of Russia, his wife Alexandra, their five children and four helpers mysteriously disappeared.

A second mystery surrounded the identity of a woman called Anna Anderson. Between 1920 and her death in 1964 she claimed to be one of the Czar's children, who had escaped with her brother. In this test, the writer explains how DNA typing solved these mysteries, more than 75 years after the deaths.

The Romanovs

Nobody knew exactly where the Romanovs were buried. Finding the burial site became an obsession for a man called Gely Ryabov. Using his position as a filmmaker for the Interior Ministry, he delved into secret archives. In the late 1970s he managed to track down the children of Yakov Yurovsky, the guard who had overseen the executions. Yurovsky's son provided Ryabov with a note that described the disposal of the bodies. With its help, Ryabov located the muddy spot where the remains were buried. A local historian helped him, along with the geologist who climbed a pine tree to spot traces of the old road travelled by the truck that carried the corpses.



Ryabov eventually uncovered a pile of black and green bones that he felt sure were those of the former Czar and his family. Also recovered from the burial site were scraps of expensive clothing that seemed to correspond roughly in gender, age and size to the Romanov family and followers.

In 1991, the work to establish the identity of the corpses began. Using computer software, researchers first compared the battered skulls with photographs of the Czar and Czarina. Initial results suggested that these were indeed the Romanovs. But for a positive identification it was decided to turn to DNA typing.

Advanced DNA

The problem was especially daunting because the scientists had only bone to work with. Unlike living tissue or vital fluids, bones contain very little DNA, and these bones were in particularly bad condition. Some were so fragile that they turned to dust when touched. The bones were taken to Britain for further study by the Home Office.

Conventional DNA analysis established that five of nine skeletons were members of one family – a man, a woman, and three children. But because of their age and deteriorated condition, the bones did not provide scientists with all that they needed to know.

They turned instead to mitochondrial DNA, which is found in structures within the body's cells and is passed down through the maternal line. The forensic team asked for and received a blood sample from Queen Elizabeth's husband, Prince Philip, who is a direct descendant of Czarina Alexandra's sister. If the bones were genuine, the team said, then Prince Philip's DNA should match that of the woman and the three children in certain respects. The results enabled chief researcher Peter Gill to announce a 'complete match'; the bones' provenance had been established 'virtually beyond doubt'. Gill declared himself and his team 'more than 98.5 per cent certain that the remains are those of the Romanovs'.



However, one mystery remained. History records that eleven people were executed in the cellar, yet only nine corpses were recovered. Yurovsky's note tells of burning two other bodies but gives no reason why. The two bodies not found were those of the Crown Prince Alexei and his sister Anastasia, both of whom were rumoured to have survived the assassination. In 1920, a woman who became known as Anna Anderson surfaced in Berlin, claiming to be Anastasia. Over the years she convinced many people of her claims, but she was never officially regarded as the missing princess. Others regarded her as a fraud. She died in 1964, still sticking to her story. Nothing found at the burial site appeared to refute her claim.



But in 1994, the truth became known. Before her death, Anna Anderson had undergone an operation and the hospital had retained a sample of tissue. Supporters of Anderson asked Gill to test the sample and compare it with the Romanov's DNA. In June 1994, Gill flew to the United States in secret to collect the sample. His findings, released the following October, exploded the myth. DNA typing proved that Anna Anderson was an impostor.

1. Why was Ryabov successful in finding the burial site?

Give **two** reasons.

-
.....
-
.....

2 marks

2. Look at the first paragraph.

(a) What does the verb phrase *track down* suggest about how Ryabov looked for evidence?

.....
.....

2 marks

(b) Find and copy another verb that conveys a similar idea:

.....

1 mark

3. Explain why it was necessary to take a blood sample from a member of the British royal family.

Give **two** reasons.

-
.....
-
.....

2 marks

4. Look at these words in paragraph 5: ‘*complete match*’; ‘*virtually beyond doubt*’; ‘*more than 98.5 per cent certain that the remains are those of the Romanovs*’.

(a) Why are inverted commas placed round these words?

.....

2 marks

5. Give two effects of including these comments in the text.

•

.....

•

.....

2 marks

6. The word *However* is used at the start of paragraph 6 and *But* at the start of paragraph 7. What do words like these at the beginning of paragraphs signal to the reader?

.....

.....

.....

1 mark

7. The writer of this text wants you to believe that the remains were definitely those of the Romanovs.

Are you fully convinced or not?

Refer to details in the text to support your views and write about:

- The authenticity of Yurovsky’s note;
- The number of bodies found;
- The reliability of the DNA test used on the bones.

You can include any other details which you think are relevant.



Entrance Examination

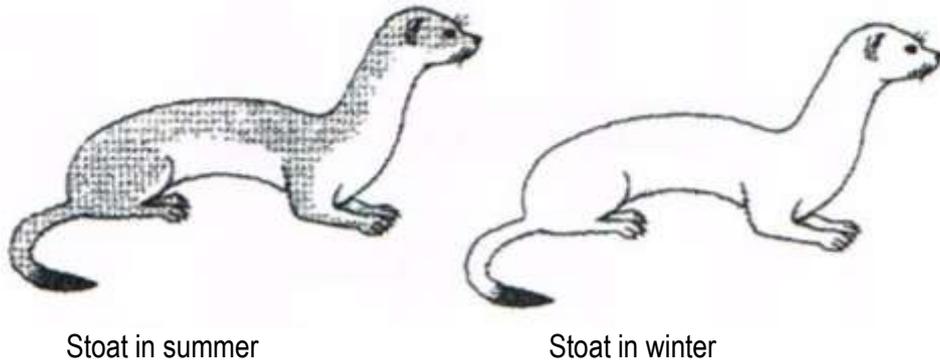
Practice Paper

Science

3rd Form (Year 9) Entry

Time allowed: 1 hour

1 (a) The drawings below show a stoat in summer and in winter.

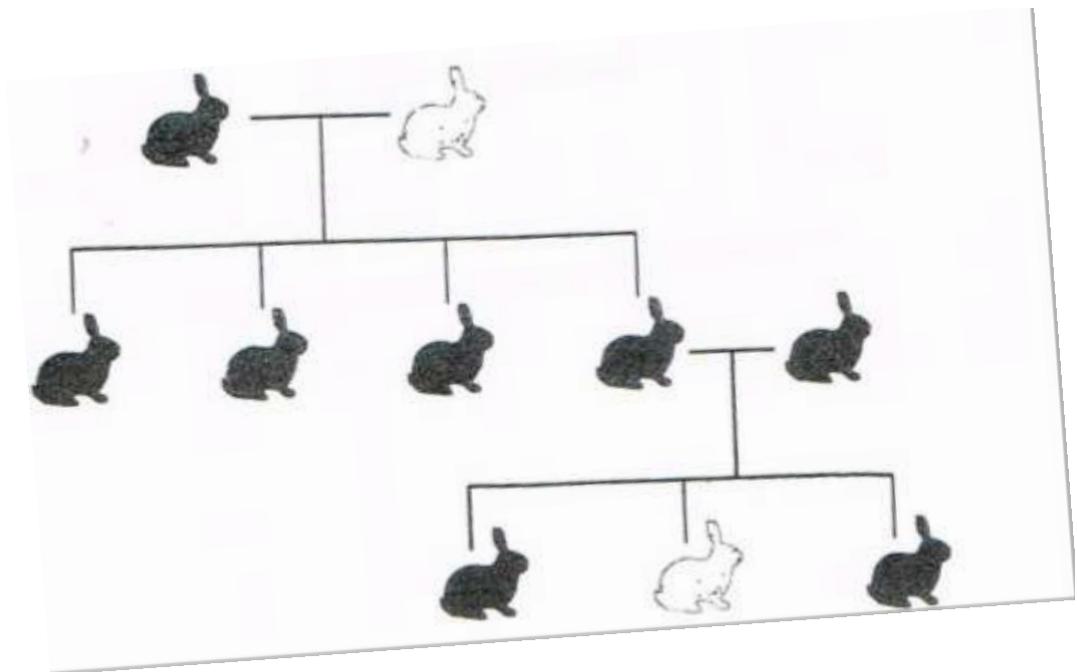


In winter the ground is often covered by snow or frost. During this part of the year a stoat's fur is white.
Suggest **two** ways its white coat helps a stoat to survive in the winter.

.....
.....
.....

2marks

(b) The diagram shows the family tree for a family of rabbits.



Use words from the list below to complete the sentences.

adapt cytoplasm genes grow inherit
 letters membrane mutate nuclei

Rabbits have the same fur colour all year round.

Young rabbits fur colour from their parents.

Information about fur colour is passed on from one generation to the next in the form of in the of an egg and sperm.

3marks

2 A group of pupils recorded some different characteristics of pupils in their class.



Name	Gender	Height, in cm	Mass, in kg	Hand span, in cm	Eye colour
Julie	girl	152	48	17.2	Blue
Laura	girl	157	54	15.0	Green
Aftab	boy	159	49	18.4	Brown
Jenna	girl	144	46	17.4	Hazel
Barry	boy	148	49	17.4	Blue
Oliver	boy	172	57	21.5	Brown
Safina	girl	155	48	16.8	Brown
Maria	girl	154	50	17.9	Green
Amanat	girl	162	46	16.2	Brown
Thomas	boy	157	49	19.9	Blue

(a) Oliver concluded that boys do **not** have green eyes.

Explain why his conclusion is **not** justified.

.....

1 mark

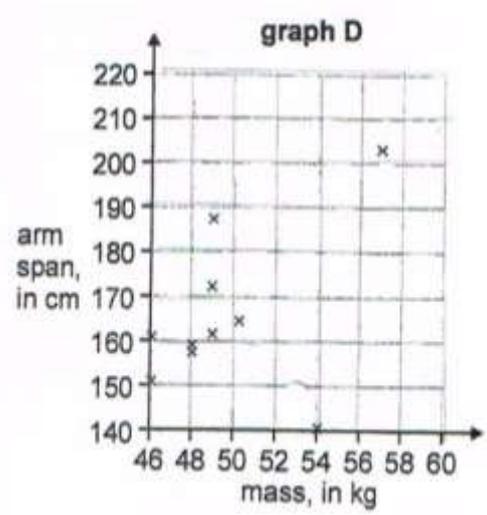
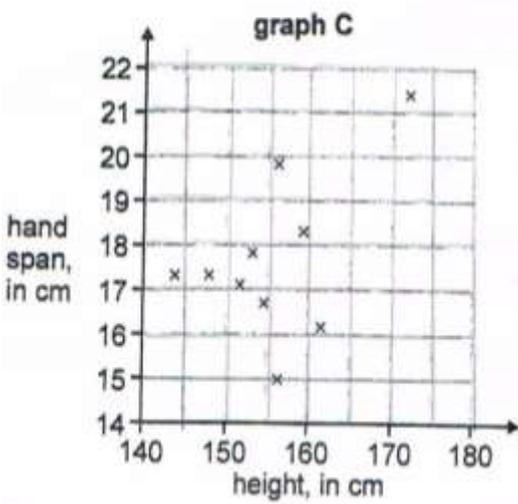
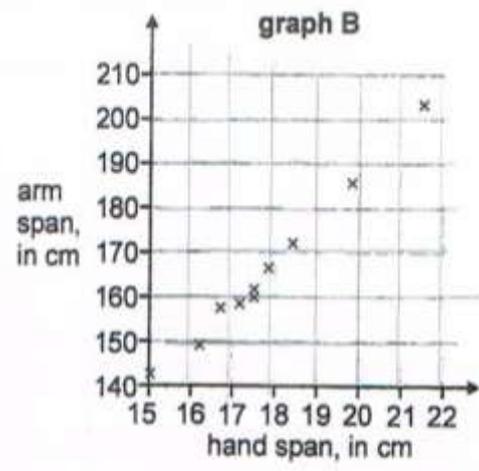
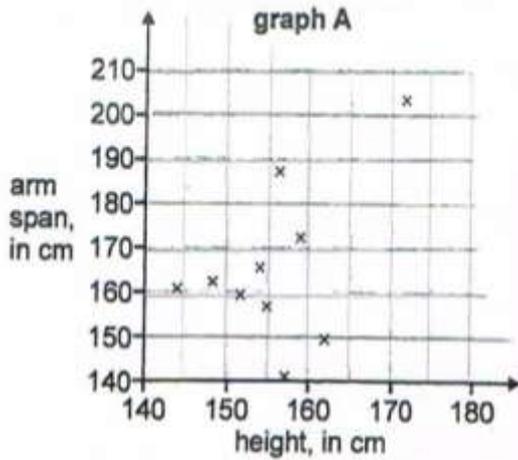
(b) Name **two continuous** variables in their table.

1.

2.

1 mark

(c) Look at the scatter graphs below.



Use the data in the scatter graphs to show whether each of the conclusions below is **true**, **false** or you **cannot tell**.

Conclusions

True or false or cannot tell

Graph C shows that the shortest pupil has the smallest hand span.

.....

Graph B shows the strangest correlation between two variables.

.....

Graph A looks similar to graph C because of the high correlation of arm span to hand span.

.....

Boys are generally taller than girls.

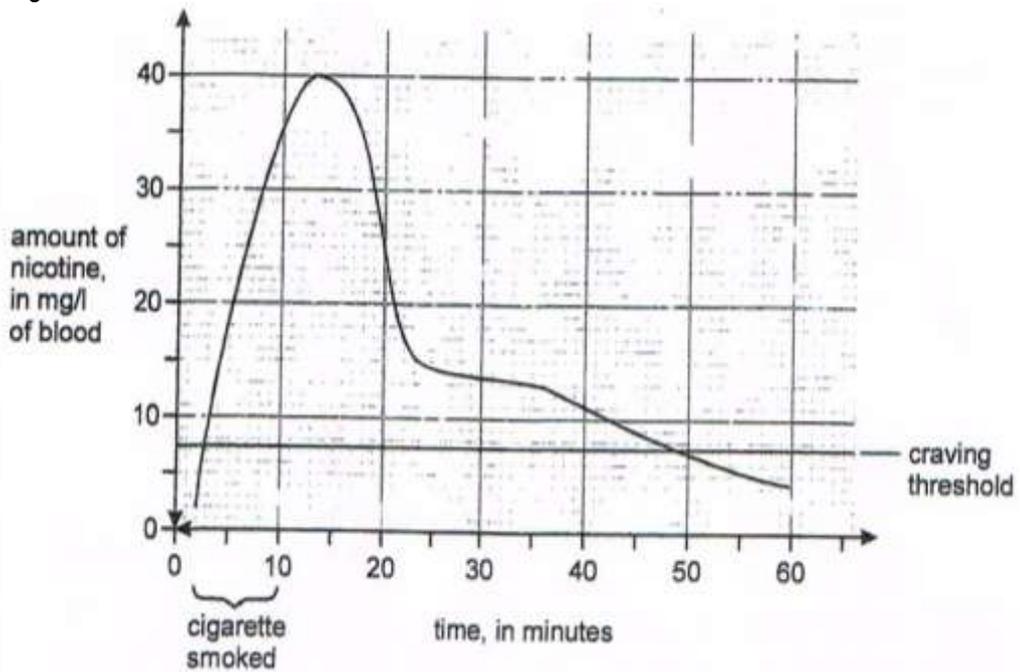
.....

2 marks

3 Wesley wants to give up smoking but finds it difficult.

(a) The graph shows the level of nicotine in Wesley's blood after he smokes a cigarette.

The craving threshold is the amount of nicotine he needs in his blood to stop him wanting a cigarette



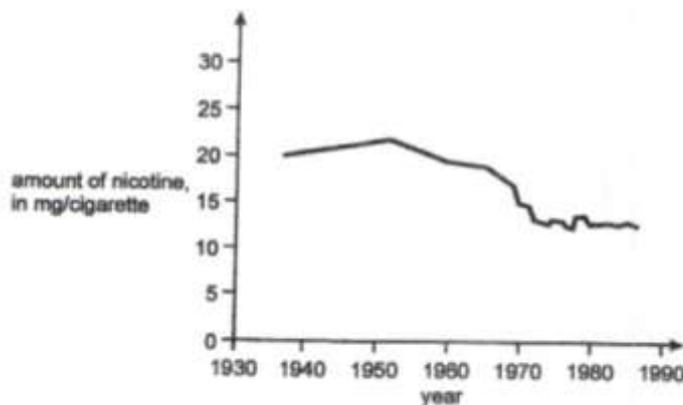
- (i) Use the graph to calculate how often Wesley needs to smoke a cigarette to keep the nicotine level above the carving threshold.

1 mark

- (ii) Wesley continues to smoke often. His craving threshold goes up. Explain why this happens.

1 mark

- (b) The graph below shows how the amount of nicotine in cigarettes changed between 1930 and 1990.



Predict **one** consequence of reducing the amount of nicotine in cigarettes. Give the reason for your answer.

.....

.....
.....
.....

2marks

- (c) Cigarette smoke contains carbon monoxide. If a pregnant woman inhales cigarette smoke, some of the red blood cells will combine strongly with carbon monoxide instead of oxygen.

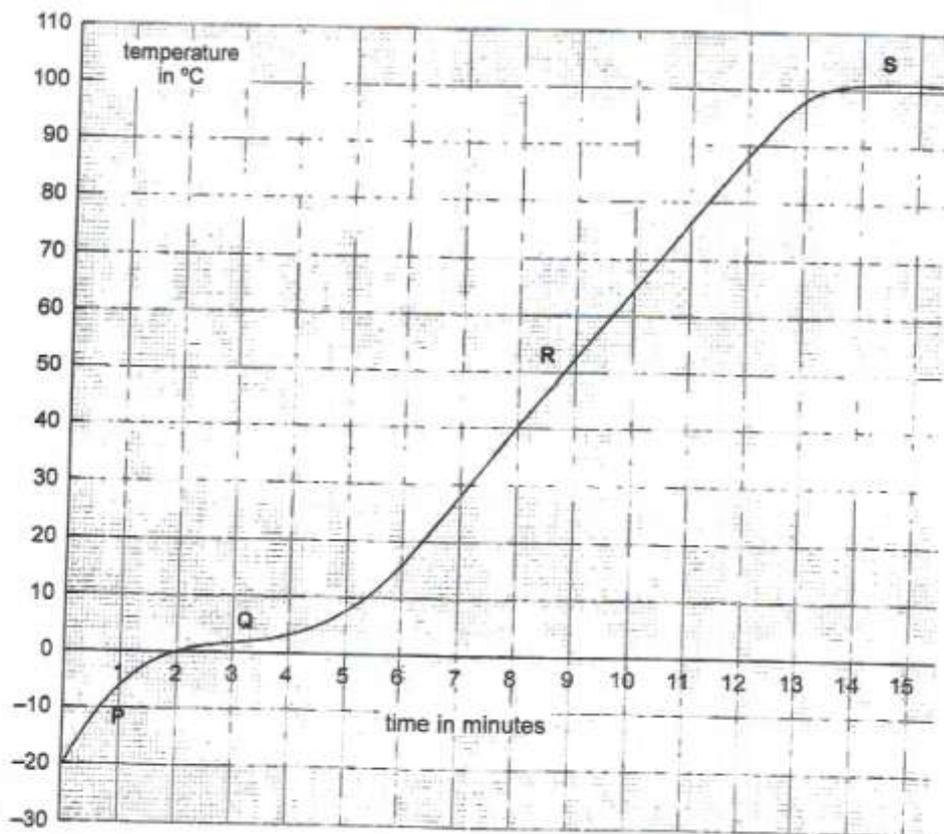
If a pregnant woman smokes, how could this harm the foetus?

.....
.....

1 mark

- 4 Some crushed ice at -20°C was placed in a beaker. A thermometer was put into the ice, and the beaker was heated gently for 15 minutes.

The graph shows how the reading on the thermometer changed over the 15 minutes.



- (a) By how much did the temperature in the beaker change during the 15 minutes?

..... $^{\circ}$

1 mark

(b) Which letter on the graphs shows:

(i) When the ice is melting? 1 mark

(ii) When the water is boiling? 1 mark

(c) During the experiment, the beaker and its contents were quickly removed from the heat and weighted on a balance at the following times.

- at 0 minutes
- at 5 minutes
- at 10 minutes
- at 15 minutes

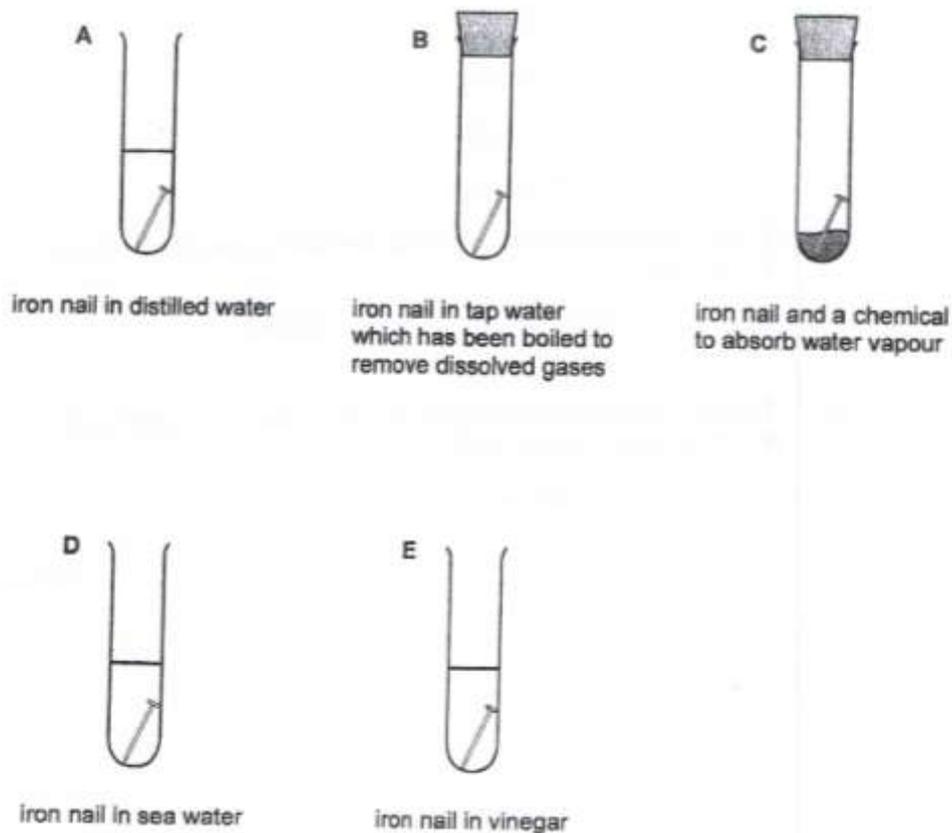
(i) At which two times would you expect the readings on the balance to be the same?

.....minutes and minutes 1 mark

(ii) Between which two of these times was the mass of the contents of the beaker changing most rapidly?

.....minutes and minutes 1 mark

5 Jessica was investigating the rusting of iron. She set up five experiments as shown below, and left the test-tubes for three days.



Jessica wrote the following results in her book.

Test-tube	observation
A	Nail slightly rusty
B	Nail still shiny
C	Nail still shiny
D	Nail very rusty
E	Nail slightly rusty, bubbles of gas seen

(a) Explain why the nails had **not** rusted in test-tubes B and C

In test-tube B

.....

In test-tube C

.....

2 marks

(b) In test-tube E the iron nail reacted with the vinegar.

(i) Is vinegar **acidic, alkaline** or **neutral**? 1 mark

.....

(ii) When the iron reacted with the vinegar, bubbles of gas were formed. What gas was formed? 1 mark

.....

(c) Before putting the iron nail in test-tube D, Jessica weighted the nail. After three days she dried and weighted the nail **and** the rust which had formed.

(i) How did the total mass of the nail and rust compare to the mass of the nail at the beginning?

.....

1 mark

(ii) Give the reason for your answer.

.....

.....

1 mark

(d) Jessica concluded that the presence of salt in the water made the nail rust more quickly. Explain why she drew that conclusion from her experiments.

.....

.....

.....

1 mark

- 6 The exhaust gases of a car with a petrol engine are analysed during its 'MOT test'. The results are shown below.

Gas	% volume
Carbon monoxide	3.0
Carbon dioxide	13.0
Oxygen	0.4
Other gasses	83.6

- (a) The air going into the engine contains about 20% of oxygen. Explain why there is only 0.4% of oxygen in the exhaust gases coming out of the car engine.

.....

1 mark

- (b) (i) Petrol is a mixture of compounds which contains only carbon and hydrogen. Complete combustion of petrol produces carbon dioxide and **one** other substance. What is this other substance?

.....

1 mark

- (ii) When petrol is burned in the car engine, carbon monoxide is produced as well as carbon dioxide.

Explain why carbon monoxide is dangerous and may kill you.

.....

1 mark

- 7 Aluminium and tin-plated steel are used to make cans for good and soft drinks.

The table below shows the pH values of some soft drinks and cooked foods.

Drinks and foods	pH value
Cola	2.0
Lemonade	3.0
Rhubarb	3.0
Beef	7.0

- (a) Cans were first used about 150 years ago to store food for soldiers. The cans were made from unplated steel. The soldiers found that beef kept in steel cans was still good to eat after many months. However they found that steel cans of rhubarb bulged, and when the cans of rhubarb were opened a gas escaped.

- (i) Why were the steel cans **not** suitable for storing rhubarb?

..... 1 mark

(ii) Name the gas that formed in the cans of rhubarb.

..... 1 mark

Part of the reactivity series is given below.

Magnesium
Aluminium
Zinc
Iron (steel)
Tin
Copper
silver

(b) In modern 'tin cans' the steel is covered with a thin layer of tin.

(i) Use the reactivity series to explain why 'tin cans' are better than steel cans for storing food.

.....
..... 1 mark

(ii) When 'tin cans' are dented, the layer of tin often cracks. What reaction might happen when the layer of tin is cracked?

.....
..... 1 mark

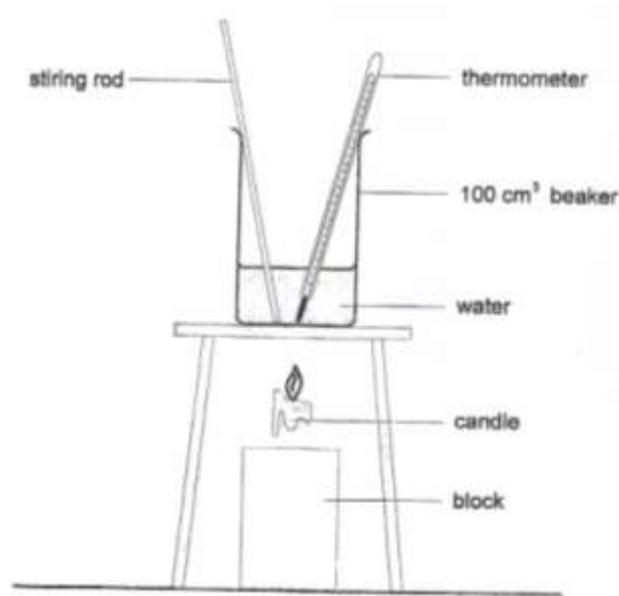
(c) Many drink cans are now made of aluminium. Given the information in the reactivity series, why is this surprising?

.....
..... 1 mark

8

Luke investigated the heating of water. He predicted that the rise in temperature would depend on the volume of water.

The diagram shows the apparatus he used.



Luke recorded his results in a table as shown below.

Beaker	Volume of water in cm ³	Temperature at start in °C	Temperature after minutes, in °C
A	25	18	30
B	50	18	24
C	75	18	22

(a) Why did Luke need to know the temperature of the water at the beginning and at the end of the experiment?

.....
.....

1 mark

(b) Did Luke's results support his prediction? Explain your answer.

.....
.....

1 mark

(c) Luke stirred the water during the experiment. How did this make his results more

reliable?

.....
.....

1 mark

(d) Which of the following statements about the energy transferred to the beakers is correct?

Tick the correct box,

Much more energy went into beaker 'A' because its temperature increased the most.

The same amount of energy went into all three beakers

Beaker 'C' received the most energy because there was more water to heat.

1 mark

(e) After a time, all three beakers cooled down to room temperature. What happened to the thermal energy in the beakers as they cooled down?

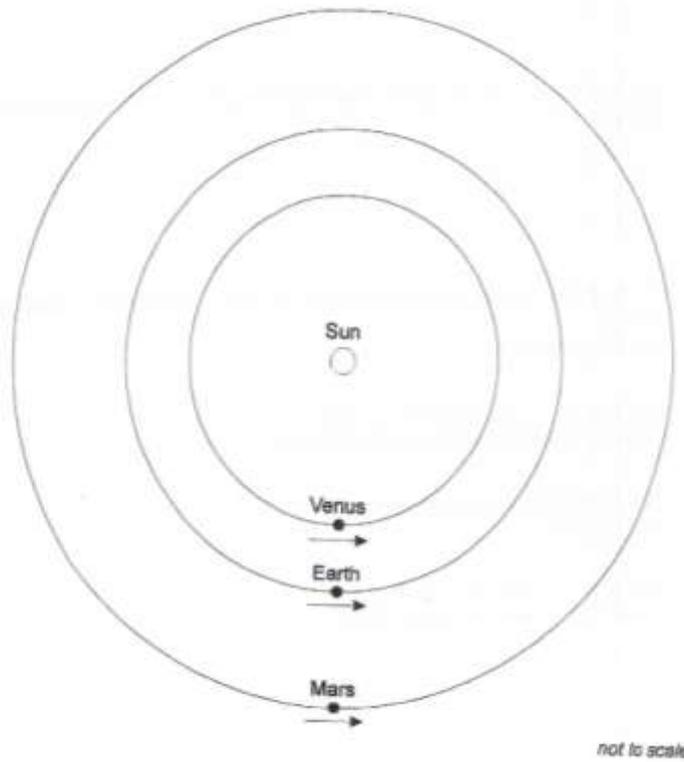
.....
.....

1 mark

9 The table shows the time taken for the Earth, Mars and Venus to orbit the Sun.

Planet	Time taken to orbit the Sun, in Earth years
Earth	1.0
Mars	1.9
Venus	0.6

The diagram shows the orbits of the Earth, Mars and Venus round the Sun, at one particular time. The arrows show the direction in which the planets move.



At the time shown in the diagram, the three planets were lined up with the Sun.

- (a) Show the position of the Earth **three** months after the planets were lined up, by marking a point on the Earth's orbit. Label the point E. 1 mark

- (b) (i) Show the approximate position of Mars **three** Earth months after the planets were lined up, by marking a point on Mars's orbit. Label the point M.

(ii) Explain why Mars is in this position.

.....

1 mark

- (c) (i) Show the approximate position of Venus **three** Earth months after the planet were lined up, by marking a point on Venus's orbit. Label the point V.

(ii) Explain why Venus is this position.

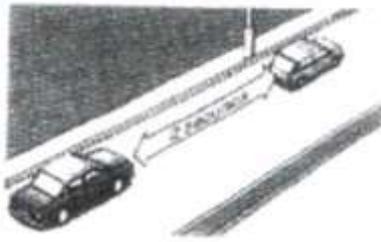
.....

1 mark

- 10 (a) The 'two second rule' is a rule for car drivers. The rule is as follows:

'Leave enough space between you and the vehicle in front so that you can pull up safely

if it suddenly slows down or stop.... A two second time gap may be sufficient ...Use stationary objects (e.g. lamp-posts) to help you keep a two second gap.'#
 (The Highway Code, 1993)



- (i) The traffic is moving at 20 m/s, and a driver is keeping to the 'two second rule'.

What is the distance between the driver and the car in front?

.....

1 mark

- (ii) The traffic increases its speed to 25 m/s, but the driver starts the same distance from the car in front.

She sees the car in front pass a lamp-post.
 How long will it take her to reach the same lamp-post?

.....
s

1 mark

- (b) The driver decides to check her speedometer while driving along a motorway. She measures how long it takes her to travel 6 km. It takes her exactly 4 minutes. What was her speed in **km/h**? Show your working.

.....

 km/h

2 marks

11 A pen cap floats in a plastic lemonade bottle three-quarters full of water.
 If you squeeze the bottle the pen cap sinks to the bottom.
 If you then let go of the bottle, the pen cap floats to the surface.



(a) When the bottle is squeezed what, if anything, happens to:

(i) The distance between the air molecules inside the bottle?

.....

1 mark

(ii) The distance between the water molecules inside the bottle?

.....

1 mark

(iii) The pressure of the air trapped inside the pen cap?

.....

1 mark

(iv) The volume of the air trapped inside the pen cap?

.....

1 mark

(b) Explain why the pen cap sinks when you squeeze the bottle.

.....

.....

.....

.....

2 marks

3rd Form Entrance Exam



Practice
Paper

Non Calculator paper
100 Marks
1 Hour



Mathematics

Name:.....

School :.....

- You must show sufficient working to make your methods clear.
- You should have a pen, pencil, ruler, rubber, compass & protractor
- Write in Black ink and draw in Pencil, use a ruler to draw straight lines.

Section 1 – Number & Geometry Skills

Question 1

Workout the value of the following

a.) 25×0.1

b.) 21.3×100

c.) $239.6 \div 10$

.....(3)

.....(3)

.....(3)

(9 Marks)

Question 2

Here is a list of fractions:

$$\frac{5}{8}$$

$$\frac{11}{10}$$

$$\frac{4}{7}$$

$$\frac{16}{25}$$

$$\frac{15}{13}$$

$$\frac{1}{5}$$

- (a) Write down the two fractions in the list that are greater than 1.

_____ and _____ (2)

- (b) Write down the difference between $\frac{16}{25}$ and $\frac{1}{5}$.

_____ (3)
(Total 5 Marks)

Question 3

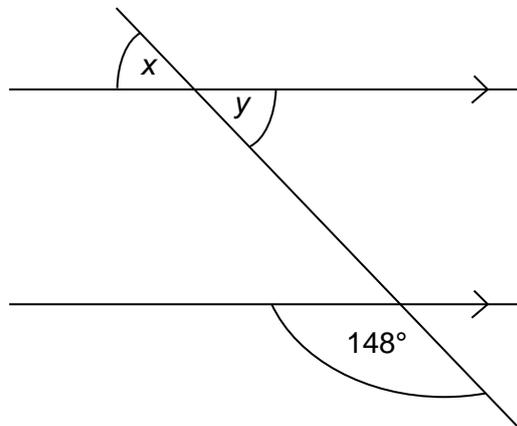
Complete the following table

+	2.5	$\frac{1}{2}$	-1
7.6			
-5			
$-\frac{1}{4}$			

(9 Marks)

Question 4

4. The diagram below is **NOT** accurately drawn.



Find the size of the angles marked with a letter.

$$x = \underline{\hspace{2cm}}^\circ$$

$$y = \underline{\hspace{2cm}}^\circ$$

(4 Marks)

Question 5

a.) Find 35% of £250

.....(3)

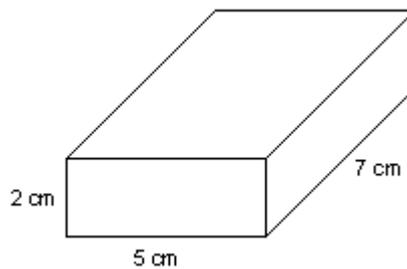
b.) Complete the following table. You must write the fractions in their simplest form.

Percentage	Fraction	Decimal
25%		
	$\frac{3}{4}$	
		0.45
115%		

(4)
(4 marks)

Question 6

Find the Surface Area of the cuboid:



(6 marks)

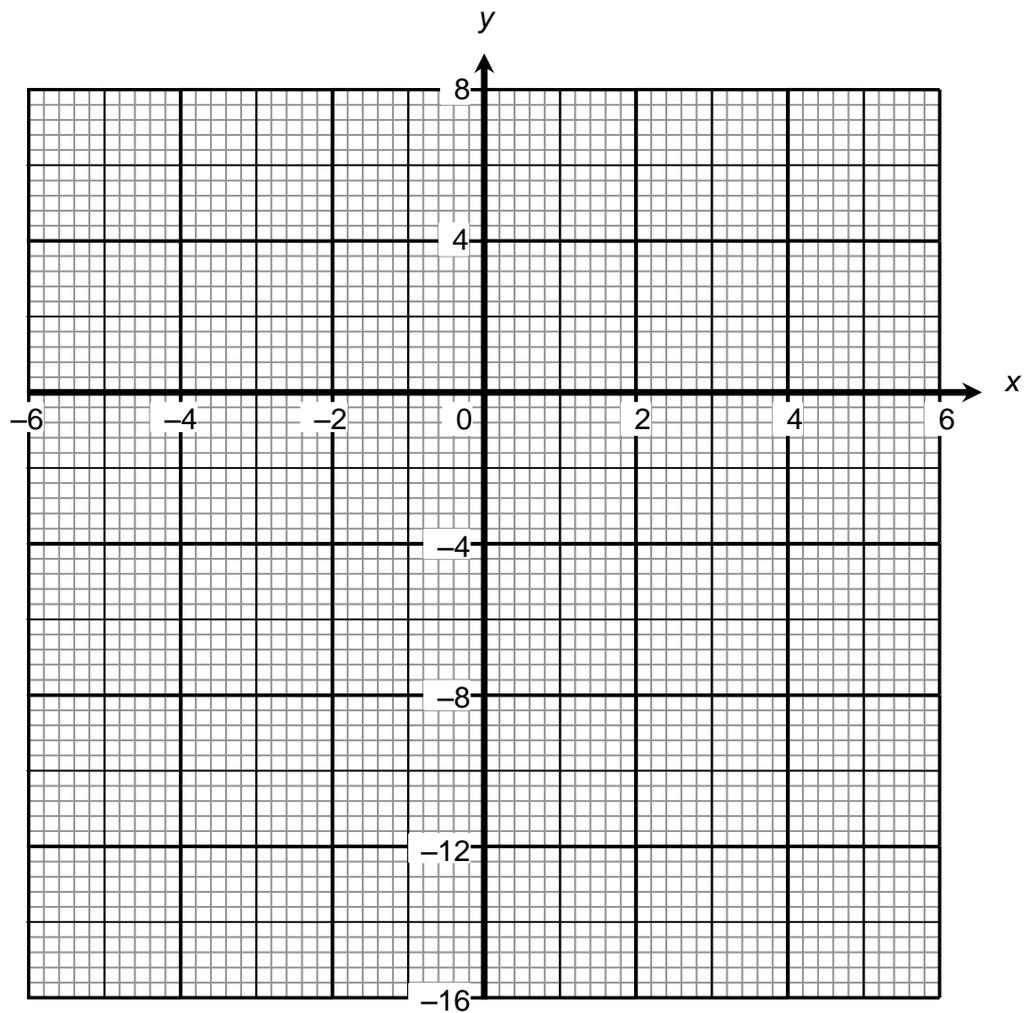
Question 7

12. Here is a table of values for $y = x^2 - 9$

x	-4	-3	-2	-1	0	1	2	3	4
y	7	0	-5	-8	-9	-8	-5	0	7

(a) Draw the graph of $y = x^2 - 9$ on the axes below.

(2)



(b) Draw the line $y = -2$ on the same graph

(2)

(c) Write down the co-ordinates where the curve and the line cross

..... and (2)
(6 Marks)

Question 8

4. (a) Work out the value of $ac - 4a$, when $a = 3$ and $c = 5$.

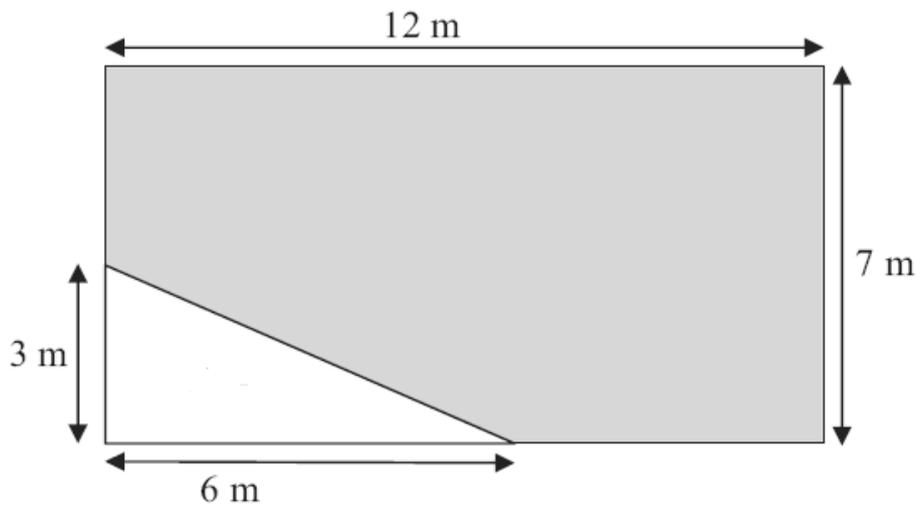
_____ (2)

(b) Work out the value of $3p^2 - 2$ when $p = 3$.

_____ (2)
(4 Marks)

Question 9

Find the area of the shaded shape:



(3 Marks)

Section 2 – Money and Time Functional Skills Problems

Question 10

The table gives information about the prices and the features of five mobile phones. The ticks (✓) in the table show the features of each phone.

Mobile phone	Price	Feature			
		Camera	MP3	FM Radio	Video
Astra	£24.97	✓			
Crystal	£24.97	✓			✓
Pixar	£39.97	✓	✓	✓	
Spark	£34.23	✓		✓	✓
Tacco	£34.97	✓	✓	✓	✓

(a) Which of the five mobile phones is the most expensive?

.....
(1)

(b) Which of the mobile phones have MP3?

.....
(1)

(c) Which mobile phone has Video but **not** FM Radio?

.....
(1)

(3 Marks)

Question 11

Jon and Alice are planning a holiday.
They are going to stay at a hotel.

The table shows information about prices at the hotel.

	Price per person per night (£)		Dinner (£)
	Double room	Single room	per person per day
01 Nov – 29 April	60.00	110.00	31.00
30 April – 08 July	75.00	150.00	31.00
09 July – 29 Aug	80.00	160.00	31.00
30 Aug – 31 Oct	75.00	150.00	31.00
Saver Prices 5 nights for the price of 4 nights from 1st May to 4th July. 3 nights for the price of 2 nights in November.			

Jon and Alice will stay in a double room.
They will eat dinner at the hotel every day.

They can stay at the hotel for 3 nights in June or 4 nights in November.

Which of these holidays is cheaper?

(6 marks)

Question 12

Cal went to the cinema.

His movie started at 20:20. The movie lasted 1 hour and 54 minutes.

- (a) At what time did his movie end? *Give your answer using the 24-hour clock.*

_____ (1)

The cinema has a student discount on tickets.

They use the following rule to work out the **discount** on tickets.

Find one quarter of the ticket cost.
Then round up your answer to the nearest whole number of pence.

The normal ticket price is £4.50.

Cal is a student.

- (b) Work out the cost of his ticket.

£ _____ (3)

(4 Marks)

Question 13

A jewellery shop buys 5 gold watches at £50 each.

The shop sells 2 of the watches for £64 each.

The shop then puts up this sign.



The marked price remains at £64, the jewellery shop sells the remaining watches at the sale price.

Work out if the shop made an overall profit or loss and by how much.

£ _____
(Total 6 Marks)

(6)

Question 14

Peter wants to tile the floor in his kitchen.

The floor of his kitchen is a rectangle with length 5 metres and width 3 metres.

The tiles he wants to buy are squares measuring 50 cm by 50 cm.

The tiles cost £5.50 each.

Calculate how much it will cost Peter to buy enough tiles to cover the floor.

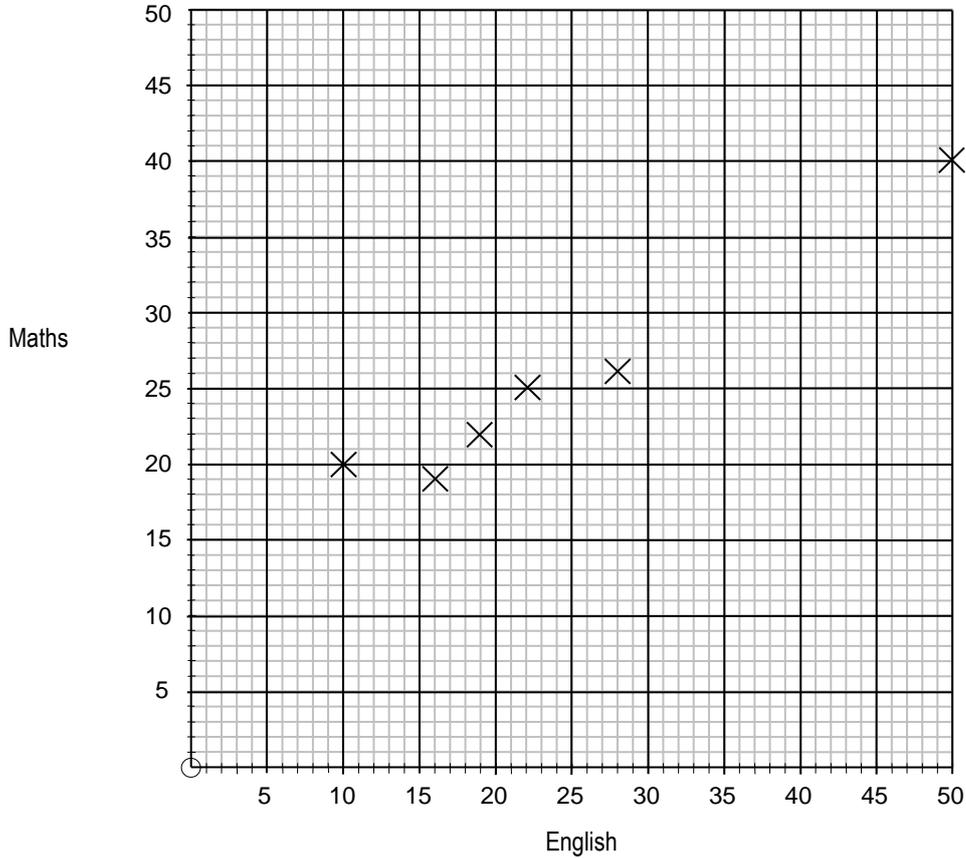
£ _____

(6 Marks)

Section 3 – Probability & Handling Data

Question 15

The scatter diagram below shows the marks 6 students got on their English and Mathematics tests.



Two more students need to be added to the diagram. Their marks are shown below.

	English	Maths
Student A	35	35
Student B	45	39

- (a) Plot these two points on the diagram. (2)
- (b) Draw a line of best fit on the diagram. (2)
- (c) Describe the correlation.(1)

Another student scored 30 marks on the English test.

- (d) Estimate the mark this student got on the Mathematics test. (1)
- (6 Marks)**

Question 16

A Spinner as the numbers 1 to 5 marked on it.

The table below shows the probability of the spinner landing on the numbers shown.

Number	1	2	3	4	5
Probability	0.25	x	0.05	0.35	0.2

(a) Find the value of x

(2)

(b) What is the probability that the spinner lands on either a 3 or a 5?

(2)

(Total 4 Marks)

Question 17

Here are the ages of 10 people in years

5 12 10 16 21 18 16 20 8 14

(a) Work out the range of these ages.

.....years (2)

(b) Find the median age.

.....years (2)

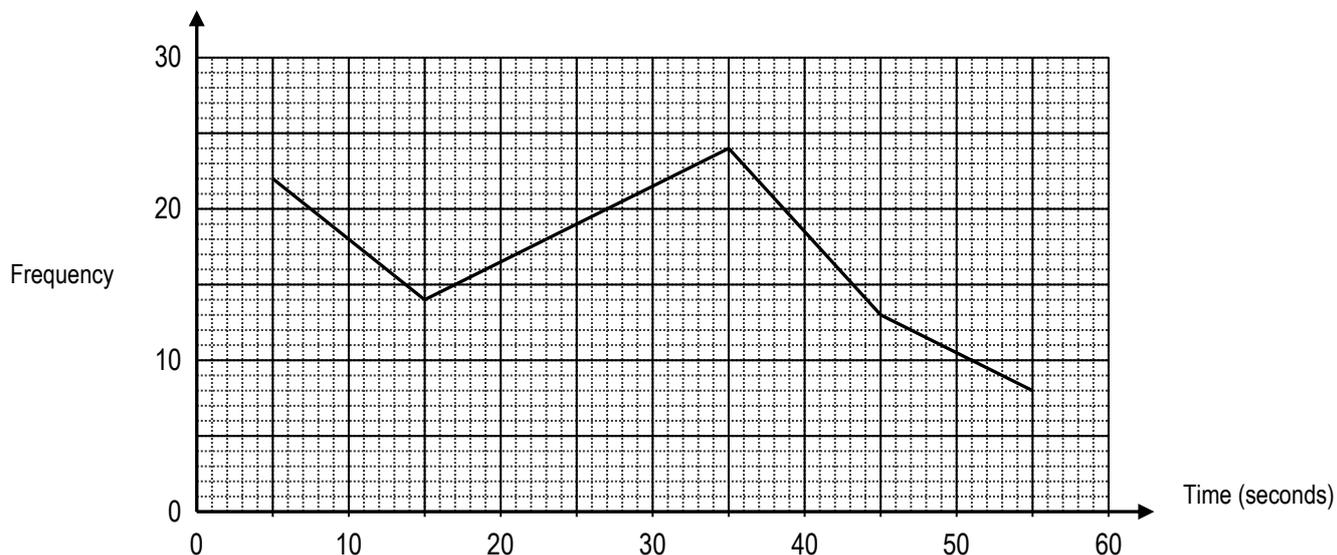
(c) Work out the mean age.

.....years (2)

(6 Marks)

Question 18

The time taken for points to be decided in amateur tennis matches is shown in the frequency polygon and table below.



Length (s seconds)	Frequency
$0 < s \leq 10$	22
$10 < s \leq 20$	14
$20 < s \leq 30$	
$30 < s \leq 40$	24
$40 < s \leq 50$	
$50 < s \leq 60$	8

(a) Complete the table.

(2)

Jenny says that the graph shows there were 18 points that were decided in **exactly** 10 seconds.

(b) Explain why it is not possible to know that from the graph.

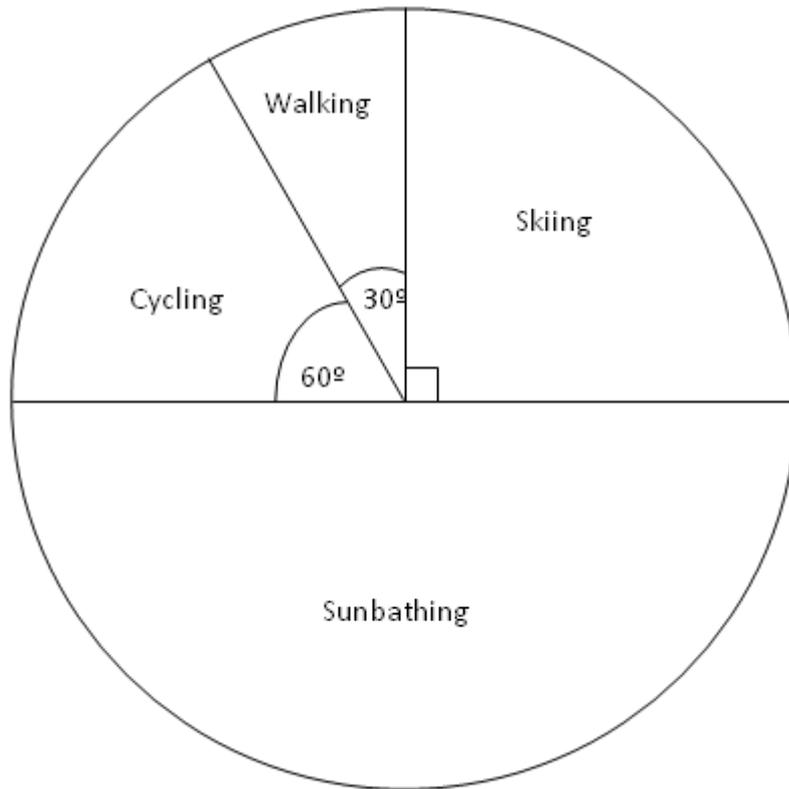
(2)

(4 Marks)

Question 19

Noreen carries out a survey of some students.

The pie chart shows some information about their favourite holiday.



5 students said that walking is their favourite holiday.

(a)

(i) How many said that cycling is their favourite holiday?

.....(1)

(ii) How many students took part in the survey?

.....(2)

Noreen chooses one of the students at random.

(b) Write down the probability that this student's favourite holiday is cycling.

.....(2)

(5 marks)

END

(100 marks)