UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Advanced Subsidiary Level

THINKING SKILLS **8436/01**

Paper 1 Multiple Choice

June 2005

2 hours

Additional Materials: Multiple Choice Answer Sheet
Soft clean eraser
Soft pencil (type B or HB is recommended)

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
There are **50** questions on this paper. Answer **all** the questions.
For each question there are five possible answers **A**, **B**, **C**, **D** and **E**. Choose the one you consider correct
and record your choice in pencil on the separate answer sheet.
Read very carefully the instructions on the answer sheet.

INFORMATION FOR CANDIDATES
Each correct answer will score one mark. A mark will not be deducted for a wrong answer.

UNIVERSITY *of* CAMBRIDGE
International Examinations

[Turn over

1 As the wealth of a country grows, the number of people wanting to get a university education may increase, because people think that with a higher academic qualification they will get a better job. Governments which want to be fair to all respond by allowing universities to accept more and more students. But this policy is not sensible in that it does not benefit all individuals. Not all of those who want to go to university can benefit from it because people's talents differ. We can't all be great musicians or great footballers. Similarly, a university education does not suit everyone.

Which of the following best expresses the **conclusion** of the above argument?

A People have differing talents and aptitudes.

B Some people who go to university do not benefit from it.

C It is unfair to exclude some people from university education.

D It is not true that higher academic qualifications lead to better jobs.

E It is not sensible to keep increasing the number of university students.

2 A recent U.K. study has shown that farmers who support fox hunting conserve 4% more woodland than farmers who do not. Supporters of hunting have suggested that although hunting involves the killing of a wild animal, it is nevertheless good for wildlife. Woodland is an ideal habitat for many endangered species. If they did not hunt, such farmers would get rid of the woodland and replace it with more economically productive farmland that is less beneficial for wildlife.

Which of the following is a **conclusion** that can be drawn from the above passage?

A Most farmers support fox hunting.

B The preservation of woodland will stop the decline of endangered species.

C Farmers are unconcerned about the preservation of endangered species.

D People who hunt are actively involved in the preservation of endangered species.

E Banning hunting would threaten wildlife as areas of woodland would disappear.

3 There is clear evidence that it is more difficult to score a high examination grade in certain subjects. For example, mathematics and foreign languages are much more difficult than most other subjects, in that a smaller percentage of those who take the examinations gain a high grade. Because schools in Britain want good examination results, they do not encourage students to choose these subjects for their Advanced-level examinations. This is why there is a decline in the numbers studying for university degrees in these subjects. Since the economy of the country is of prime concern, a policy of encouraging those with aptitudes for mathematics and languages should be introduced.

Which one of the following is an **assumption** underlying the reasoning in the above passage?

A Students should be required to take examinations in mathematics and languages.

B A successful economy needs people with advanced skills in mathematics and languages.

C There are many people who have an aptitude for mathematics and foreign languages.

D Schools in Britain think that mathematics and languages are not important subjects.

E Students could get better results in mathematics and foreign languages if they worked harder.

4 Some bookshops have a café area in which customers can relax, drink a cup of coffee and look at a book from the shop before they decide whether to make a purchase. Even customers who don't visit the café find that the smell of coffee makes them feel more relaxed and at home, and so they spend more time in the shop that they would have done otherwise. Therefore installing a café area is a profitable policy for bookshop owners.

Which of the following, if true, **strengthens** the above argument?

A Some potential customers are likely to avoid a crowded bookshop.

B Most bookshop customers would like the prices of books to be reduced.

C The longer people spend in bookshops, the more likely they are to make a purchase.

D People who want to buy books are not interested in using the café area in bookshops.

E Some customers use bookshop cafés primarily to socialise with their friends.

5 The pineal gland in the human brain produces a hormone called melatonin, which induces us to fall asleep. Some air travellers take supplements of melatonin to avoid sleeplessness when they cross time zones, but it is not known if these supplements cause side effects. For most people, melatonin is produced at dusk or during darkness, which is why we sleep mainly at night. This is also why it is difficult for night shift workers in factories to stay awake. Experiments have shown that if people are exposed to artificial light of certain wavelengths and intensities, their production of melatonin is suppressed.

Which of the following can be drawn as a **conclusion** from the above passage?

A Lighting conditions could be used to help night workers to stay awake.

B People who suffer from insomnia should take supplements of melatonin.

C The pineal gland of night workers produces melatonin during the daytime.

D Night workers could be made to stay awake by being given stimulating tasks to perform.

E Factories where people work at night should use lighting of the highest intensity.

6 The chart below shows the changes in share price for two companies, Europa Systems and KB Lasers over a three-year period.
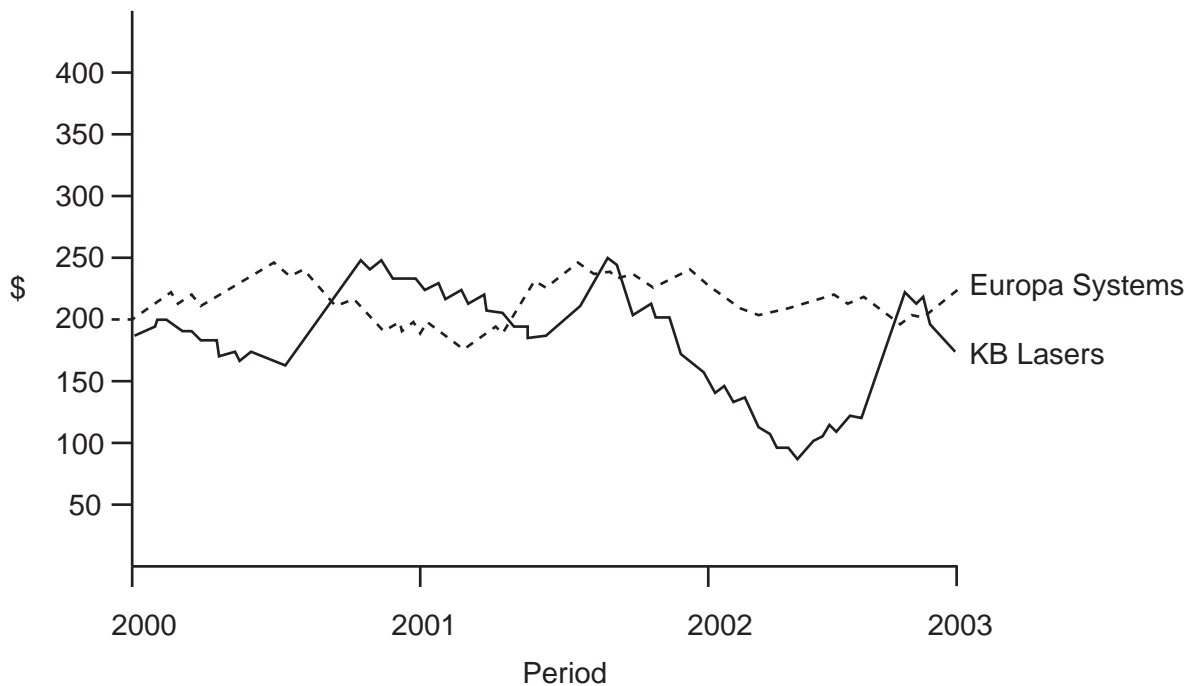
Which of these **conclusions** may be drawn from the information in this chart?

A The share prices for the two companies tend to rise and fall together.

B There have been four periods over the three years when company KB Lasers' share price exceeded that of Europa Systems.

C The difference between the share prices of the two companies has never been greater than $50.

D KB Lasers has the greater variation in its share price.

E Europa Systems' shares spend more time moving up than moving down in price.

7 I have booked the function room at the Superior Hotel from 8 pm to midnight next Saturday for a party. The hire charge (including food) has been quoted as:

$40 plus $12 per hour plus $8 per person.

I have asked the hotel to cater for 60 people.

How much does the booking cost?

A $568

B $616

C $688

D $792

E $896

8 The runner Sven Hashmi recently tried to break his country's 10km running record of 27 minutes 30 seconds. In order to achieve this he had to run at an average time of better than 66 seconds for each 400m lap. His **cumulative** progress is shown in the graph below. An entry of 4 means he was 4 seconds behind the schedule after the lap shown, whilst –2 means he was 2 seconds ahead of the schedule at that point.
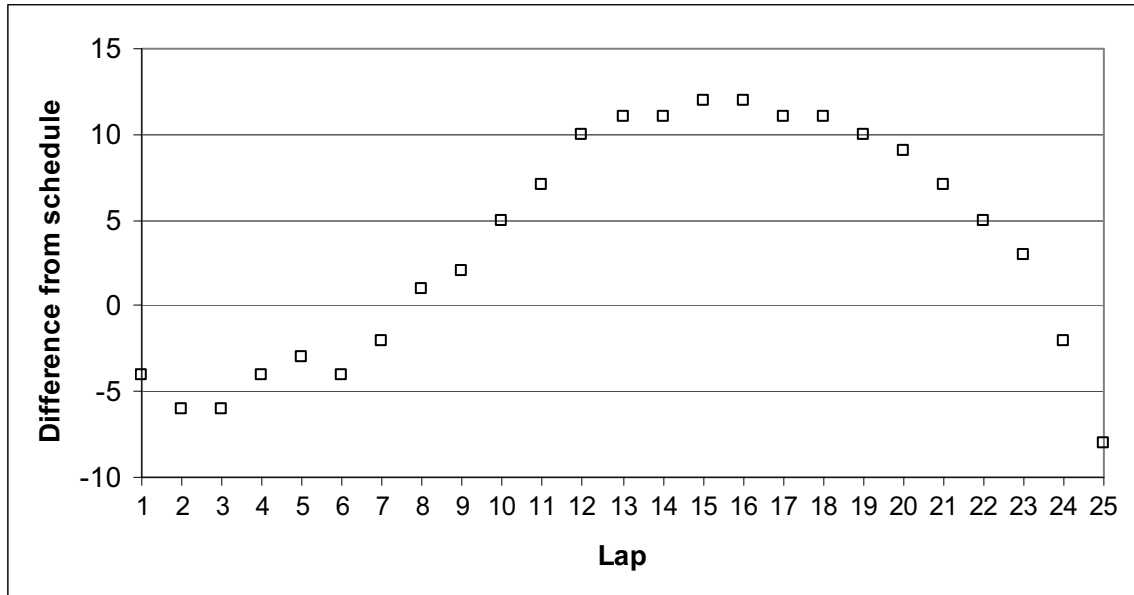
How much ahead of the schedule did he run for the last 2000m?

A 5 seconds

B 8 seconds

C 9 seconds

D 17 seconds

E 19 seconds

9 The Widget Manufacturing Company has five Executive Sales Consultants each of which is responsible for one part of the country. They have sales targets for each quarter of the year which depend on the potential market in the area and seasonal fluctuations in business. The targets and performance (+ for better than target, - for worse than target) are shown in the table below.

Name	Region	Sales $000	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Year
Brown	North	Target	800	900	750	600	3050
		Performance	+100	+150	+50	+450	+750
Green	East	Target	1000	1200	900	800	3900
		Performance	-100	+350	-150	+250	+350
White	Midlands	Target	1200	1600	1050	900	4450
		Performance	+100	-150	+50	+200	+200
Black	West	Target	900	1050	800	650	3400
		Performance	+200	+150	+350	+100	+800
Grey	South	Target	1300	1500	1200	1000	5000
		Performance	-150	-100	+200	+150	+100

Who recorded the biggest sales total for any single quarter during the year?

A Brown

B Green

C White

D Black

E Grey

10 Harry lives at the top and Joe lives at the bottom of a hill 6 km long. Each Saturday they meet at a bench on the hill somewhere between their houses. They find that, if they both leave their houses at 10 am, they arrive at the bench at the same time. They both walk at 2 km/hr uphill and 6 km/hr downhill. After talking for an hour they each return home.

How much earlier does Joe arrive home than Harry?

A They arrive at the same time

B Joe arrives ½ hour before Harry

C Joe arrives 1 hour before Harry

D Joe arrives 1 ½ hours before Harry

E Joe arrives 2 hours before Harry

11 As a response to the recent outbreak of SARS in China, the government closed all schools as a way of controlling the disease. Many were concerned about the effect this would have on the children's education. However, no child in China will be disadvantaged relative to others. The normal problem with children missing school is that they fall behind relative to their fellow pupils. All children missed school in China and a few weeks is no great amount of time over a child's lifetime.

Which one of the following is an **assumption** underlying the above argument?

A SARS would not have been controlled if the Chinese government had not closed schools.

B Chinese children would not achieve more in another type of education system.

C In the short-term, absence from school has the same degree of effect on all children.

D Factors outside of school e.g. parental interest have no effect on achievement.

E Closing schools should be used more often as a response to national problems.

12 'Members of the jury: the defendant claimed in his statement to the police that he had never been to the victim's house in his life. However the police have a number of witnesses who can testify that this claim is incorrect. Since the only plausible explanation for the defendant lying is that he has something to hide, there can be no doubt that he is guilty of the crime.'

A major **flaw** in the above argument is that:

A it overlooks the principle that a person is guilty until proven innocent.

B it implies that the jury can decide whether the defendant's statement was true.

C it assumes that what he has to hide is his guilt.

D it bases the argument on a claim that is also the conclusion.

E it attacks the defendant rather than the defendant's case.

13 A new computer has been developed that can process three million possible chess moves per second. Recently this computer beat the best human chess player in the world, even though he had undergone a daily 13 hour training programme in preparation for the match. Therefore, humans can no longer claim to have the highest level of intelligence on the planet.

Which one of the following is an **assumption** underlying the reasoning in the above passage?

A Skill at chess playing is a reliable indicator of intelligence.

B There are many different aspects of human intelligence.

C Computers will continue to develop at a rapid rate.

D Computers are only as intelligent as their inventors.

E No player can process every possible chess move.

14 In Britain during the 1970s there was a strike by doctors. It was predicted that because doctors were not attending to patients, more people would die than would have died if the doctors had not been on strike. But in fact the death rate fell during the strike. We can conclude that treatment by a doctor, far from curing seriously ill people, actually hastens their death.

Which of the following states a **flaw** in the above argument?

A It implies that doctors should not be allowed to strike.

B It presents evidence which contradicts its conclusion.

C It ignores other possible causes of the fall in death rates.

D It assumes a correlation between serious illness and death rates.

E It assumes that the prediction about death rates was misguided.

15 Recent riots and demonstrations against World Trade Organisation meetings have forced the issue of globalisation on to TV screens around the world. But the contentious topic raised its head in 1940's France in the distinctive shape of the Coca-Cola bottle. This well-known container and its contents provoked fury in some quarters and prompted parliamentary debates and front page editorials, warning not only of the alleged menace of the soft drink to French national health and its wine industry, but to France's very way of life. As the Cold War began, many in France viewed this symbol of globalisation as representing everything they did not want, and they said so loudly.

Which of the following is a **conclusion** which can be drawn from the above passage?

A Anti-globalisation protest is not something new.

B There are health risks associated with Coca-Cola.

C Coca-Cola was a threat to the French wine industry in the 1940s.

D Globalisation has altered France's way of life.

E France was the first nation to stand up to globalisation.

16 A brochure is to be made by folding a sheet of A4 paper as shown below. The paper is printed on both sides before folding.
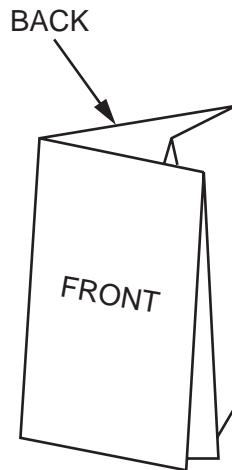
BACK

FRONT

Which of the layouts below shows the correct positions of the front and back page?

A

		BACK top
top FRONT		

B

	BACK top	
top FRONT		

C

top FRONT	top BACK	

D

	top BACK	top FRONT

E

|	BACK top	
		top FRONT

17 The cog sizes and chain length on a bicycle are designed to even out wear, so that the same hole in the chain does not encounter the same tooth on the cog in every revolution. The chain wheel (front cog) of a particular bicycle has 48 teeth, the rear cog has 18 teeth and the chain has 90 holes.

How many revolutions must the front cog do before the chain and both cogs are back in exactly the same relative positions (i.e. the same holes are encountering the same teeth on both cogs)?

A 5

B 8

C 15

D 20

E 30

18 A mobile telephone company charges for its calls at 30p for the first minute then 0.5p per second.

Which line in the graph below represents this charge scheme?

www.theallpapers.com
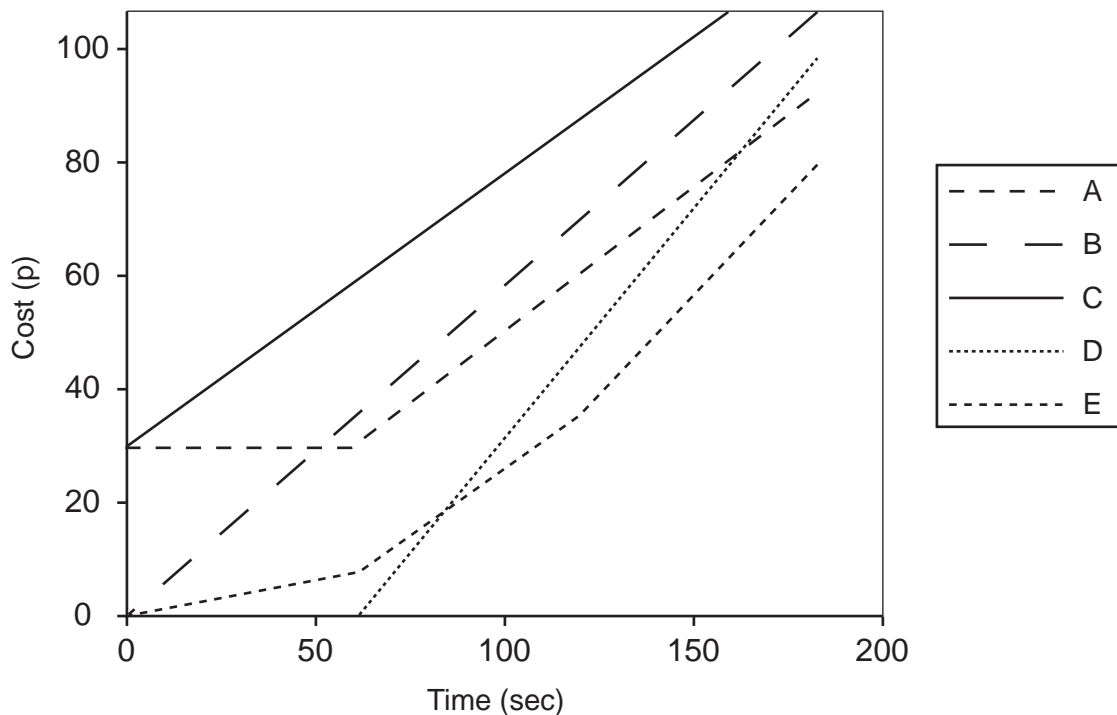
19 On the island of Skilly tax is paid as follows:

No tax on the first $5000 of income, then10% on the next $10000 plus 25% on the remainder.

How much tax is paid on an annual income of $45000?

A $4500

B $8500

C $9000

D $11250

E $12750

20 The table below records the scores of 100 games in a football league. The entries show the number of games in which the teams have scored the number of goals shown in the headings (for example there were 10 games in which the home team scored 2 goals and the away team scored 1 goal).

		Goals scored by the home team				
		0	1	2	3	4 or more
Goals scored by the away team	0	12	8	8	4	4
	1	3	7	10	3	2
	2	5	7	8	3	2
	3	5	3	2	0	0
	4 or more	3	1	0	0	0

In how many games were 3 or more goals scored?

A 0

B 14

C 18

D 31

E 57

[Turn over

21 Many people object to the huge rewards paid to a few top people, and feel that there should be some limit on their earnings. But a cut in the highest levels of pay would just create a new, lower band of top earners, and the same argument would then inevitably be used to reduce *their* income. This downward spiral would continue until everyone was paid little more than the lowest unskilled worker, and no one would then have any motivation to strive for excellence. Educational standards would plummet from lack of incentive. The economy would suffer from lack of skills. The quality of everyone's life would be poorer. No, any cap on high earnings would do more harm than good.

Which of the following best describes the **flaw** in the above reasoning?

A It assumes that there are many different levels of pay from the highest to the lowest.

B It assumes that the people who object to the high incomes of a few are those who earn much less themselves.

C It assumes what it sets out to prove: that a cap on earnings would be counter-productive.

D It assumes people's objection to very large inequalities would necessarily apply to all inequalities.

E It assumes that all the people in the economy are unskilled, uneducated and poor.

22 News programmes on television should communicate the facts, and only the facts. Producers and presenters of these programmes usually include analysis and evaluation of the facts, because they think that viewers want to watch an entertaining performance. But the interests of viewers are not being met, because what they really need is the opportunity to make their own evaluations, and that requires being given an accurate account of events.

Which one of the following is an **assumption** underlying the reasoning in the above passage?

A Accurate reporting of events is not possible.

B News programmes on television are not entertaining.

C Analysis and evaluation in news programmes distorts the facts.

D Producers and presenters of news programmes aim to mislead viewers.

E Television presenters cannot analyse the facts as effectively as viewers can.

23 There has been much discussion about whether it is harder to get a good exam grade in 'traditional' academic subjects compared to more recent established courses. Typically, many would argue that a traditional subject like physics is much more difficult than a new subject like psychology. However exam statistics disprove this. 37% of students sitting physics got A grades in the U.K. 2003 summer 'A' level exams. In psychology only 15% got A grades. This shows that psychology is actually more difficult than physics.

Which of the following best expresses the **flaw** in the above argument?

A The statistics do not show the academic ability of the students doing each subject.

B Physics and psychology involve such different skills, comparison is meaningless.

C The author assumes that exam success is the most reliable indicator of academic ability.

D The statistics do not show the total number who took the two exams.

E There is no general agreement about the meaning of the expression 'academic subject'.

24 Generally, people being interviewed for a job expect to be judged solely on their ability: if theirs are clearly the best credentials, they naturally feel that they should be appointed, and consider it an injustice if some other, less qualified person gets the job instead. It is time to abandon this self-centred approach, and ensure instead that the different social groups are proportionally represented in all walks of life, including employment. So, for instance, if there are few women holding senior positions in the police force, the next vacant position should automatically go to a woman, even if the strongest applicant is a man. And he should gracefully accept that creating social harmony is more important than his own personal ambitions.

Which of the following best illustrates the **principle** underlying the argument above?

A Universities should reserve places exclusively for state-school students, if the numbers coming from private schools are disproportionately high.

B Excessive pay awards should not be given to top managers because of the understandable resentment they cause amongst the lower paid.

C It is company policy that all section managers should be over 30, but Usha is so well qualified she should be promoted now, although she is only 27.

D The preservation of First Class and Standard Class sections on trains is indefensible because it perpetuates snobbery.

E No sector of society should get preferential treatment because every individual should be rewarded according to their merits.

25 Employers in developed countries such as Germany and the USA are crying out for people skilled in computer technology. Although one solution would be to encourage immigration of those who have such skills, restrictions on using foreign labour make it difficult to meet the demand in this way. It would be in the interest of many companies to follow the example of one US-based software company which employs 230 programmers who are located in Siberia. The advantages for employers are that they avoid costs associated with relocating workers, and workers are more contented if they do not have to leave their own country, either uprooting their families or leaving them behind. Moreover the education level of the Siberians is excellent, and their command of other languages is good.

Which of the following, if true, would most **strengthen** the above argument?

A Wage rates are much lower in Siberia than in Germany and the USA.

B There is pressure in Germany and the USA to make it easier for those with technology skills to immigrate.

C The money spent by Siberian workers in their home area boosts the economy of a less-developed region.

D Communication can break down between head office and the workers in Siberia.

E Some aspects of computer programming, such as graphic design, differ greatly in different cultures.

26 A teacher is getting a group of pupils to sort an alphabet of plastic letters:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

They are to sort them into twelve boxes according to the following categories:

		All straight lines	All curved lines	Curved and straight lines
	0		**O**	
	1			
Number of loose ends	2	**N**		
	3	*		
	4			

The number of loose ends is the number of ends of lines that the letter has, so O has none and N has 2. These two letters have been put into the correct boxes.

How many letters go into the box marked *?

A 3

B 4

C 5

D 7

E 8

           [Turn over

27 The word game Scrabble is played with 100 tiles. Two of the tiles are blank; they can be used to represent any letter of the alphabet, but they have no points value. On each of the other tiles there is a letter of the alphabet and the points value (between 1 and 10 inclusive) associated with that particular letter.

This table shows the distribution of letters, and the points value for each letter in Scrabble:

letter	number of tiles	points value	letter	number of tiles	points value
A	9	1	N	6	1
B	2	3	O	8	1
C	2	3	P	2	3
D	4	2	Q	1	10
E	12	1	R	6	1
F	2	4	S	4	1
G	3	2	T	6	1
H	2	4	U	4	1
I	9	1	V	2	4
J	1	8	W	2	4
K	1	5	X	1	8
L	4	1	Y	2	4
M	2	3	Z	1	10

How many tiles in a Scrabble game have a points value of more than 2?

A 14

B 16

C 23

D 25

E 30

28 The management at Toony Towers theme park is introducing a new group admission charge which must be booked in advance. The individual admission charge is normally £12. The new group charge will be £25 booking fee plus £5 per person. If the sum of the individual charges is less than the group charge the booking fee will be ignored and the individual charges applied.

Which row of the following table represents the cost per person (rounded down to the nearest £1) if using the cheapest payment method?

	Number in group						
	1	2	3	4	5	6	7
A	£12	£12	£12	£10	£9	£8	£8
B	£12	£12	£12	£11	£10	£9	£9
C	£30	£17	£13	£11	£10	£9	£9
D	£12	£24	£36	£45	£50	£55	£60
E	£30	£35	£40	£45	£50	£55	£60

29 The length of a chain necklace is given by the length of each link minus twice the thickness of the metal in a link all multiplied by the number of links.

How many links are there in a necklace 63 cm long with 4.0 mm long links of metal 0.25 mm thick?

A 158

B 168

C 180

D 236

E 252

30 Conducted tours of Oldfort Castle begin at the castle entrance every 15 minutes from 9.30 am to 5.00 pm daily. Each tour takes 35 minutes to complete.

A number of guides are employed on a part-time basis to lead these tours. However, on a day when a guide does work, he/she is expected to lead a minimum of six guided tours.

What is the earliest possible time a guide at Oldfort Castle can hope to finish work for the day?

A   11.35 am

B   1.00 pm

C   1.15 pm

D   1.50 pm

E   2.00 pm

31 People who have been in prison often have difficulty finding paid employment upon release. This is partly because many lack basic skills in literacy and numeracy that employers require. Also, they often find it difficult to adapt to the routine and discipline of a full-time job. It would overcome the problems released prisoners face in finding employment if the government arranged for all prisoners who need it to have training in basic literacy and numeracy skills. Work schemes should also be set up within prisons so that prisoners become used to the routines of the workplace before they are released.

Which of the following, if true, would most **weaken** the above argument?

A   Some prisoners already have adequate skills in literacy and numeracy.

B   It would be expensive to implement work schemes in prisons.

C   Many employers are prejudiced against former prisoners.

D   Some prisoners may need a lot of help in learning basic skills such as reading and writing.

E   Many prisoners would not want to be employed in a proper job.

32 There is much debate among scientists about what infinity means. But they do agree that what it does not mean is that when you keep counting forever you reach a number called 'infinity'. Every counting number, however big, is finite. So whatever infinity means it is not a number in the ordinary sense, because if it were you could always add 1 to it and make it bigger.

Which of the following best summarises the **main conclusion** of this argument?

A   You can always add 1 to any number and make it bigger.

B   'Infinity' is not a number you reach by endlessly counting.

C   If any number were infinite you could not count to it.

D   If you counted forever you would come to something that was not a number.

E   Adding 1 to infinity does not make it any bigger.

33 More than ten years after the ban on fishing for cod off Canada's Atlantic coast, there is almost no sign of fish stocks getting back to normal as they were expected to do. Fisheries experts now think they know why. 'We have learnt,' says a chief science adviser, 'that when fish numbers get very low the cod reproduce far less successfully than they do when the stocks are healthy, and if you predict recovery times based on healthy stocks you will be over-optimistic.' Europe has also been heavily over-fishing. So, if the Canadian experts are right, it is already too late to save Europe's cod stocks from a similar fate.

Which of the following is an underlying **assumption** of the above argument?

A Europe is planning to impose a ban on cod fishing.

B The cod in European waters breed in a similar way to those in Canadian waters.

C Fish stocks will not recover in the next ten years.

D A ban on fishing is not the answer to falling fish stocks.

E The Canadian experts are right about the reasons for the slow recovery of fish stocks.

34 When mobile telephones first appeared, the large telephone companies downplayed the importance of this new technology. Despite their trying to persuade us that we did not need mobile phones, and despite the absence of strong advertising campaigns by the new mobile phone companies, sales of mobile phones took off more rapidly than sales of any other consumer item have ever done. So, clearly, when we buy consumer goods, we do so simply because we want them, and not because we are persuaded by the efforts of manufacturers and retailers to influence our choices.

Which of the following states a **flaw** in the above argument?

A It assumes that people need to use mobile phones.

B It draws a general conclusion from the example of mobile phones.

C It ignores the possible dangers to the health of users of mobile phones.

D It makes a prediction about mobile phone sales from insufficient evidence.

E It assumes that telephone companies did not want sales of mobile phones to take off.

35 Research in America suggests that people are more likely to recognise the stars of soap operas than world leaders. A sample of 400 people were given photographs of three world leaders and three 'soap stars'. Only 30% were able to identify the world leaders, such as the Russian president Vladimir Putin, yet 80% were able to identify 'soap stars' such as Jennifer Aniston, one of the main actors in the American series 'Friends'.

Which of the following is a **conclusion** that can be drawn from the above passage?

A Some people in the sample recognised both the soap opera stars and the world leaders.

B Some people in the sample recognised neither the soap opera stars nor the world leaders.

C At least 80% of those in the sample must regularly watch soap operas.

D A person who recognises soap opera stars is more likely to recognise world leaders.

E A person who recognises world leaders is less likely to recognise soap opera stars.

36 In the country of Enigmia the postage charge for sending a letter is calculated according to the following formula:

20 cents per 50 square centimetres of envelope area plus 32 cents per 40 grams of weight.

All measurements of area and weight are rounded up to the next multiples of 50 square centimetres and 40 grams before calculation.

Jennifer has a letter weighing 125 grams in a 20 cm by 12 cm rectangular envelope that she wants to send.

What will the postage charge be for Jennifer's letter?

A $1.48

B $1.68

C $1.76

D $1.96

E $2.28

37 A private mailing company charges postage on parcels as follows:

Add twice the weight in kilograms to the volume in litres and multiply the result by one thousandth of the distance the parcel is sent in kilometres (1 litre equals 1000 cubic centimetres).

This gives the postal cost in dollars.

A customer wishes to post a parcel which measures 50cm x 50cm x 20cm and weighs 40kg to a city 200km away. How much will it cost?

A $18

B $26

C $28

D $36

E $40

38 Quickfence Ltd has the following method for calculating the price it will charge to put up a new fence:

- Labour is charged at £25 per hour or part of an hour. It takes ¾ hour of labour per metre to put up a fence.

- Fence panels are 2 m long and cost £20 each. If they have to be cut, the price of a full panel is charged.

- Fence posts cost £5 each. A post is needed between fence panels and at both ends.

What will be the price for a fence 13 m long?

A £420

B £425

C £430

D £505

E £580

39 The following figures from a car magazine show values from which the running costs per year of several models of car may be calculated. These figures have been averaged over the first three years of the car's life. Other factors (such as road tax and insurance) are the same for all the cars in the table. Note: 100p = £1.

If a motorist drives an average of 24000 km per year and petrol costs 75 p/litre, which will be the most economical car over the three years?

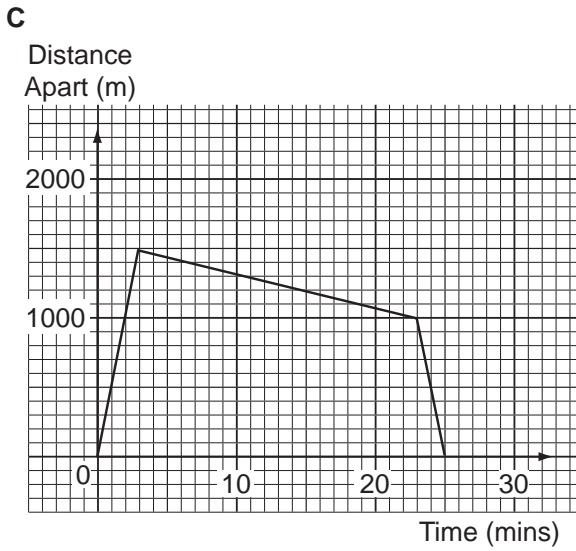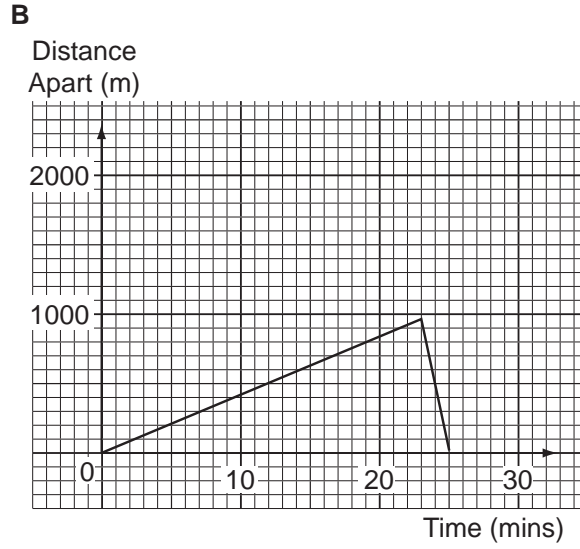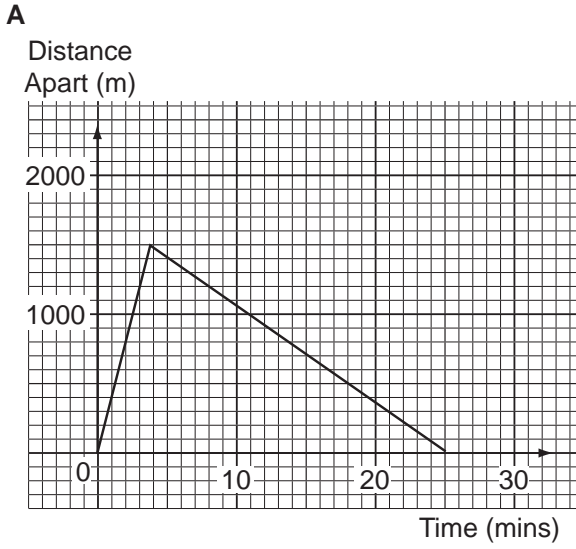| Model	Purchase price	Average depreciation per year over 3 years	Servicing cost average per year	Petrol consumption (km/litre)
Antares	£7500	10%	£320	16
Belgo	£12000	6%	£360	12
Contina	£10000	8%	£480	20
Dante	£8000	8%	£240	20
Espera	£11000	8%	£210	18

A Antares

B Belgo

C Contina

D Dante

E Espera

40 Kit and Kat decided to visit their grandparents yesterday.

Kit set off on his skateboard and covered the 12 kilometre journey at a steady speed of 8 metres per second.

Kat left home 3 minutes after Kit, on her bicycle. She took the same route, pedalling at a steady 10 metres per second.

Which of these graphs shows how far apart Kit and Kat were during their journeys from the time Kit set off?

A

Distance
Apart (m)

Time (mins)

B

Distance
Apart (m)

Time (mins)

C

Distance
Apart (m)

Time (mins)

D

Distance
Apart (m)

Time (mins)

E

Distance
Apart (m)

Time (mins)
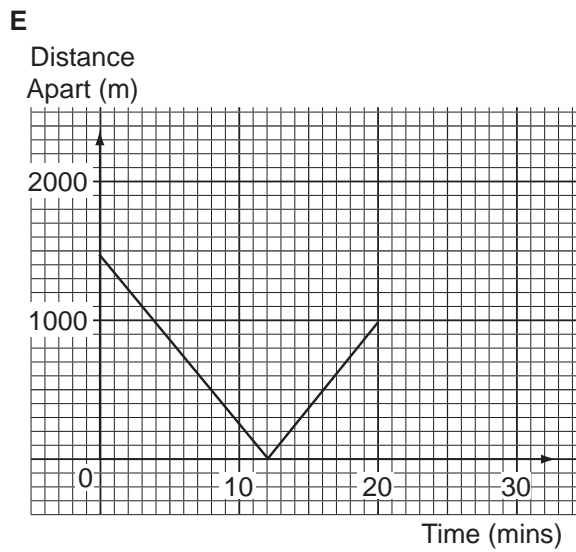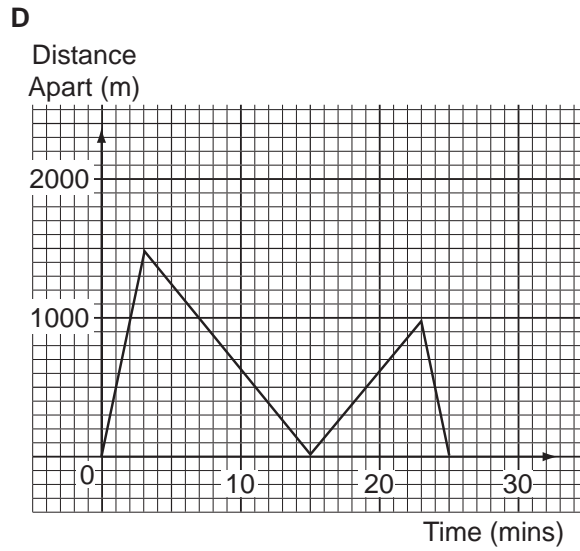
41 The following is a statement by Icelandic tour operators:

Iceland is famous as one of the best places in the world to watch whales and dolphins, including the majestic blue whale, the largest creature ever to inhabit our planet. For many of our holiday-makers a whale-watch trip is one of the highlights of their holiday. Many people feel that whale watching is not compatible with whaling (the hunting and killing of whales) and it is likely that they will reconsider visiting Iceland now that whaling is again being conducted in Icelandic waters, whether it is done for 'scientific' or for commercial reasons. Therefore whaling will almost certainly have a damaging effect on our tourist industry.

Which of the following, if true, would most **strengthen** the tour operators' argument?

A Few tourists are aware that Iceland has resumed whaling.

B There is no scientific justification for whaling.

C Many of the visitors to Iceland are keen conservationists.

D The cold waters around Iceland are an ideal habitat for whales.

E Whaling is a multi-million dollar industry.

42 It is more important for punishments to make offenders less likely to commit further crimes than for criminals to have to suffer very tough punishments. Imprisonment is ineffective in preventing reoffending. A new scheme in New Zealand should be more widely adopted. There, instead of being sent to prison, first offenders whose crime has harmed others are required to meet their victims and to agree a way in which they can compensate for their crimes. The result is that criminals are many times less likely to commit crimes again, probably because it helps them to develop a sense of social responsibility. The public may initially think this system is too lenient, but once the results become obvious, public support will follow.

Which of the following, if true, **strengthens** the above argument?

A Adopting the New Zealand scheme will be expensive in the early stages.

B The public want the authorities to give criminals more severe punishments.

C Some crimes, for example, failure to pay taxes, do not have an obvious victim.

D Victims in the New Zealand scheme say the system helps them to cope with distress caused by the crime.

E Criminals who have taken part in the New Zealand scheme say it is just as tough as going to prison.

43 The graph below shows the height of a random selection of 20 year-old fir trees growing at different altitudes on a hillside.

height of tree (m)

altitude (m. above sea-level)
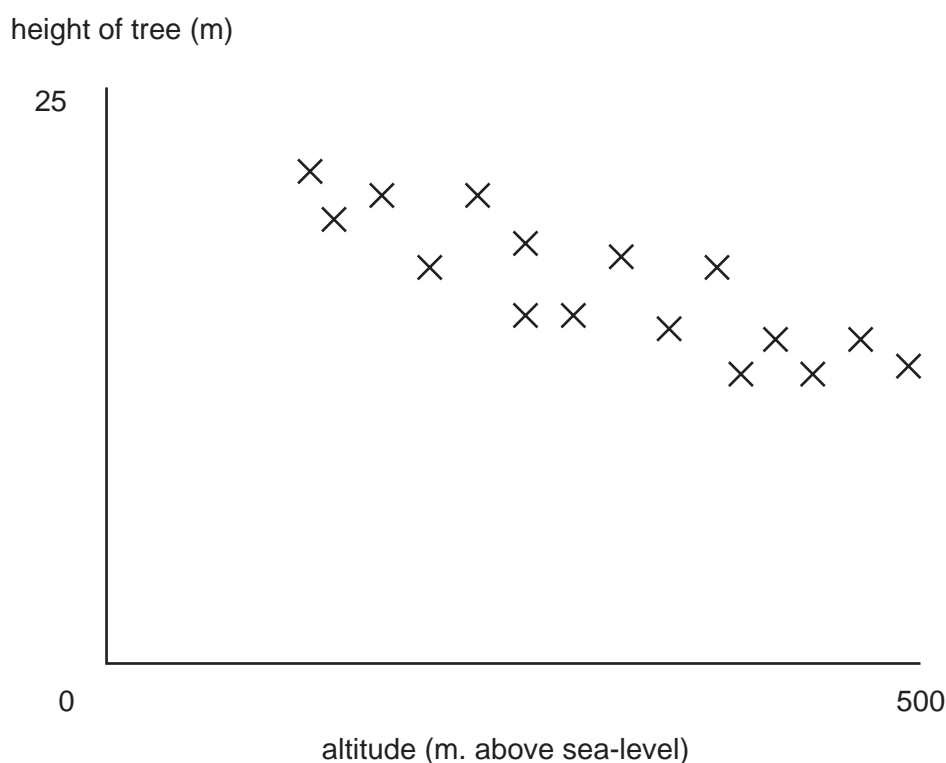
Which of the following **hypotheses** is supported by the data?

A The height of a tree can be used to calculate the altitude at which it is growing.

B All trees growing at lower altitudes will be taller than trees on high ground.

C Soil at higher altitudes gets progressively poorer, accounting for slower tree-growth.

D Trees cannot grow as tall at higher altitudes because the air is thinner and because the temperature is cooler.

E The growth rate of the fir trees shows a tendency to reduce with altitude.

44 When CD audio-discs were first introduced, people were persuaded that their sound quality was better than the old vinyl discs and that they were indestructible unlike vinyl, which was very easily damaged. This should have meant they were a good buy even though they were considerably more expensive. However, many people would argue that bass tones are actually better on vinyl and CD's have proved equally prone to damage and need replacing just as much as vinyl. Therefore the supposed advantages of CD's have proved to be advertising hype. People would have been better to have saved their money and stayed with the old vinyl disc technology.

Which one of the following is an **assumption** underlying the above argument

A CD's were purchased without good reason.

B CD's have no other advantages over vinyl.

C CD's are actually an inferior product to vinyl.

D CD's are more expensive to produce than vinyl.

E CD's cannot be replaced by a better disc technology.

45 Concern has been raised about the possible link between the MMR vaccine (which protects children from measles, mumps and rubella) and a medical condition known as autism. Reported cases of autism rose during the 1980's, which is when the MMR vaccine was first introduced. This led to a significant decline in the number of parents opting for the vaccine during the 1990's because they feared it caused autism. However, autism was increasingly understood and recognised from the 1980's onwards. A large amount of research suggests that there is no link between the MMR vaccine and autism. Therefore it seems likely that the increase in reported cases was simply due to better recognition rather than a genuine increase in the condition due to the MMR vaccine.

Which of the following, if true, would most **strengthen** the above argument?

A Cases of measles, mumps and rubella have increased during the 1990's.

B The number of autism cases levelled off during the 1990's.

C The number of autism cases continued to rise during the 1990's.

D Cases of measles, mumps and rubella decreased during the 1990's.

E Scientific research does suggest a link between MMR and other conditions.

46 There are four political parties in the country of Questonia. They are the Who Party, the What Party, the When Party and the Why Party.
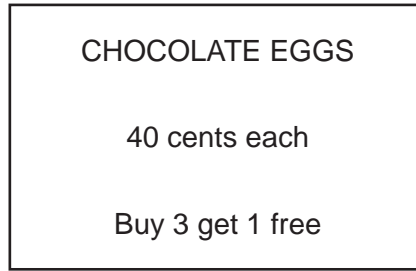
This pie chart illustrates the distribution of the parties in the current Questonian Parliament:
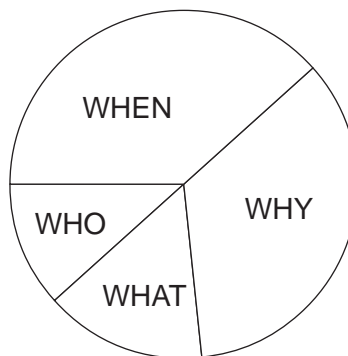
There are 120 seats in the Questonian Parliament. Which of the following is the correct number of seats for each of the parties?

	When	Why	What	Who
A	46	42	18	14
B	46	43	18	13
C	47	42	17	14
D	48	44	16	12
E	48	43	17	12

47

CHOCOLATE EGGS

40 cents each

Buy 3 get 1 free

When I saw this sign in the supermarket I thought it meant that if I bought 3 eggs, one of the 3 would be "free".

However, when I took 45 of these eggs to the checkout I discovered that I had to pay for 3 in order to get one extra "free".

How much more did I have to pay for my eggs than I originally assumed?

A $1.20

B $1.50

C $1.60

D $4.40

E $6.00

     [Turn over

48 Jerry is keen on sailing and keeps a boat at the local club based on a shallow estuary. He works Monday to Friday. Whenever the tide is right he takes his boat out after work and also sails at the weekend. If he leaves work promptly he can launch his boat by 17.00 in the evening, but he must be back at the launch slip no more than 30 minutes after sunset. He does not sail early in the morning because the club is not open until 09.00, nor does he go out unless he can have a session lasting at least one hour. Jerry has combined the time the tide is right for a session and sunrise/sunset into a single table to show the potential window of opportunity for sailing.

Here is an extract from Jerry's table covering the last days before he stops sailing for the winter:

Date	Day	Session One	Session Two	Sunset + 30 Mins
1	Saturday	01.42 – 05.42	13.54 – 17.54	19.09
2	Sunday	02.15 – 06.15	14.27 – 18.27	19.07
3	Monday	02.48 – 06.48	15.00 – 19.00	19.05
4	Tuesday	03.21 – 07.21	15.36 – 19.36	19.03
5	Wednesday	03.55 – 07.55	16.15 – 20.15	19.00
6	Thursday	04.34 – 08.34	16.59 –20.59	18.58
7	Friday	05.16 – 09.16	17.49 – 21.49	18.56
8	Saturday	06.04 – 10.04	18.46 – 22.46	18.54
9	Sunday	07.04 – 11.04	19.57 – 23.57	18.52
10	Monday	08.28 – 12.28	21.23 – 00.23	18.49
11	Tuesday	09.54 – 13.54	22.37 – 02.37	18.47
12	Wednesday	10.59 – 14.59	23.36 – 03.36	18.45
13	Thursday	11.54 – 15.54	----------------	18.43
14	Friday	00.29 – 04.29	12.44 – 16.44	18.41
15	Saturday	01.17 – 05.17	13.31 – 17.31	18.38
16	Sunday	02.01 – 06.01	14.16 – 18.16	18.36

What is the last working day that Jerry should mark on this table as possible for sailing before the winter break?

A 3rd

B 6th

C 7th

D 14th

E 16th

49 When I hold a party, experience has taught me to use the following method of computation in order to decide how many bread rolls to buy:

"Subtract 5 from the number of people who have replied "yes" to their invitation, then multiply by 3.
Add to this half of the number of people who have not replied."

I have invited 40 people to a party that I am holding tomorrow. Of the 32 that have replied, only 4 are unable to come.

How many bread rolls will I buy for tomorrow's party?

A 73

B 77

C 81

D 83

E 85

50 Jason left Ranjiv's house yesterday afternoon, walking home at 5 kilometres per hour. Ranjiv quickly discovered that Jason had left his mobile phone behind and, 6 minutes after his departure, set off after him on his bicycle at 25 kilometres per hour.

How far had Jason walked when Ranjiv caught up with him?

A 375 metres

B 450 metres

C 500 metres

D 600 metres

E 625 metres

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32

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