

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

THINKING SKILLS

8436/01

Paper 1 Multiple Choice

June 2006

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 **45** 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. Ignore responses numbered 46 – 50 on the answer sheet.

INFORMATION FOR CANDIDATES

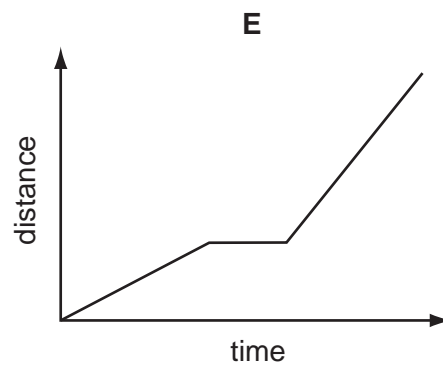
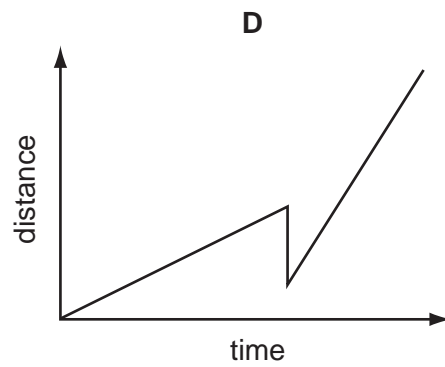
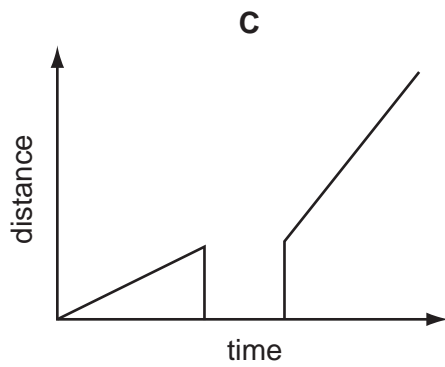
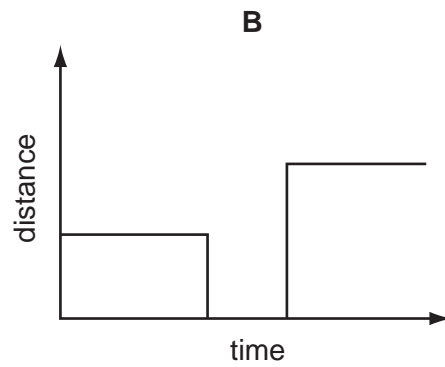
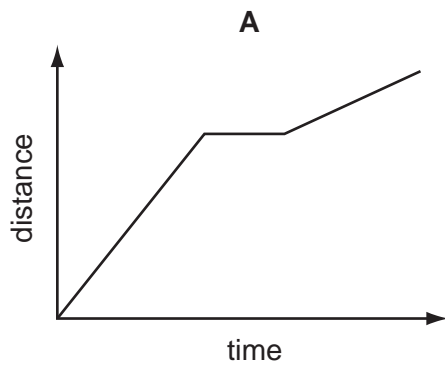
Each correct answer will score one mark. A mark will not be deducted for a wrong answer.

This document consists of **27** printed pages and **1** blank page.

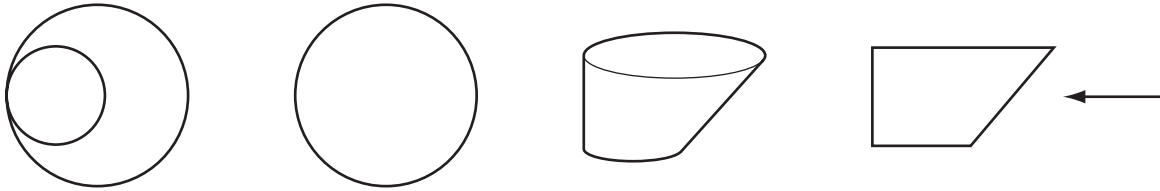


- 1 Gustav walks to work each day. One day he met his friend Frederik halfway and stopped to talk to him for five minutes. He then had to hurry the rest of the way so he would not be late.

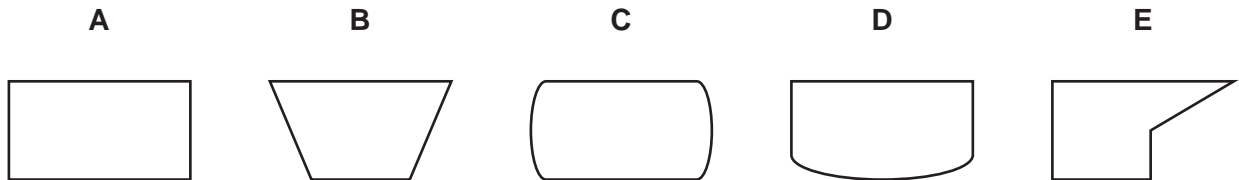
Which of the following distance / time graphs best represents Gustav's journey to work?



- 2 The diagrams below illustrate four views of a solid figure.



Which of the responses below illustrates the view of the figure from the direction shown by the arrow on the fourth diagram?



- 3 Pierre and Françoise are driving from Caen to Calais and have agreed to drive half the journey each. The journey is all on motorways and they drive at a constant 120km/hr. Pierre drives first and, after 1 hour, they see a sign saying "CALAIS 260km".

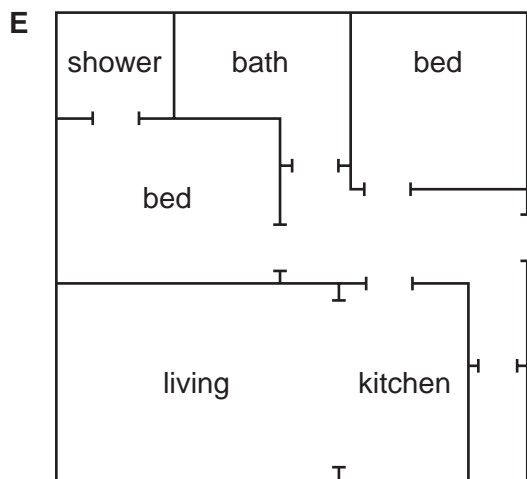
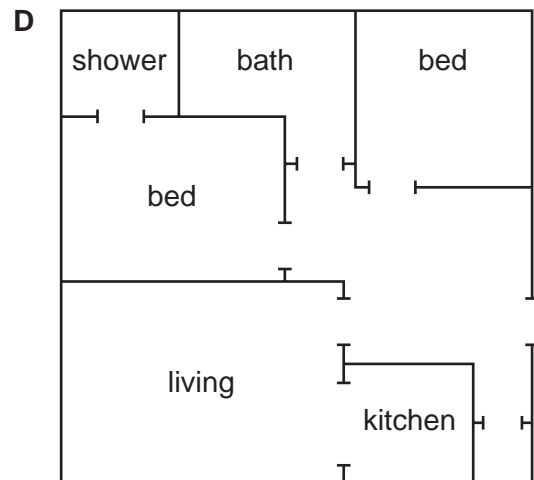
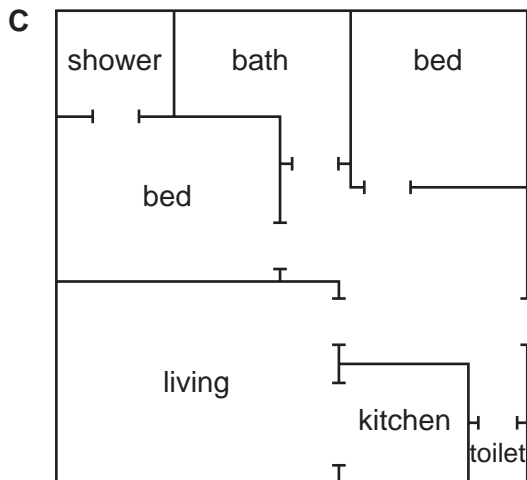
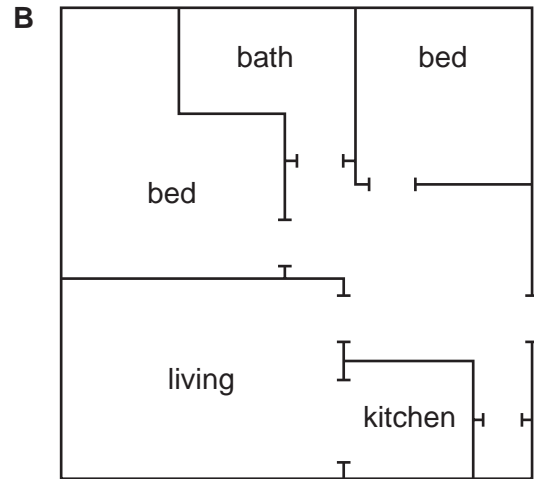
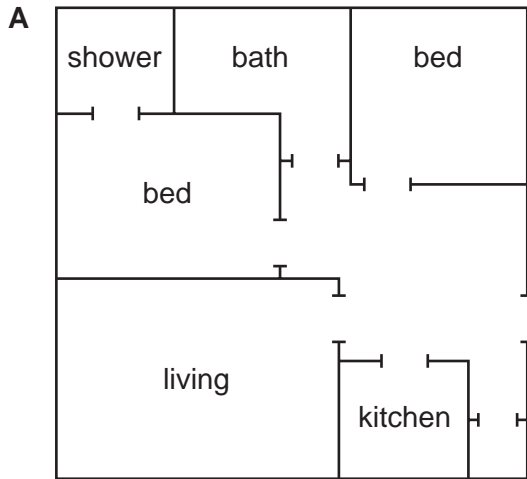
For how much longer should Pierre drive?

- A 5min
- B 35min
- C 1hr 05min
- D 1hr 10min
- E 1hr 35min

- 4 The following is an estate agent's description of a flat which he has for sale:

A spacious 2-bedroom flat, well appointed and in a good decorative order. The front door leads to an entrance hall off which there are a large living room, two bedrooms and a bathroom. There is a walk-in storage cupboard at one end of the hallway. The living room leads to an open plan kitchen with a good range of appliances. The main bedroom has a shower room en suite. There is a good sized second bedroom and the bathroom is fitted with a wash/hand basin, bath and toilet. An early viewing is recommended.

Which of the following floor plans could represent the flat described above?



- 5 Poetic writing sometimes uses numbers in ways which are not in common use. For example, twenty-four blackbirds are meant by the reference to "Four and twenty blackbirds baked in a pie."

There are echoes of an old system of counting by twenties when a lifespan is described as "three score years and ten" rather than seventy.

How would you interpret "one and two score"?

- A 3
 - B 39
 - C 41
 - D 60
 - E 1220
- 6 On average, the life expectancy of people in the lowest income groups is much lower than that of people in the highest income groups. This is partly due to the fact that the higher one's income is, the more likely one is to have good housing and a nutritious diet. Smoking is also a major cause of early death due to lung cancer or heart disease. Therefore we can conclude that smoking is a contributory cause of the difference in life expectancy between the richest and the poorest in society.

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

- A The richest in society are unlikely to die from heart disease.
 - B The poorest in society cannot afford to pay for better health care.
 - C Those who have a nutritious diet are unlikely to suffer from cancer.
 - D All types of cancer are more common among the lowest income groups.
 - E Smoking is more common in the lowest income groups than in the highest.
- 7 There are plans to form a volunteer army of retired people to go into hospital wards and classrooms every day to help out. This is a ridiculous idea because most retired people have worked hard throughout their lives and wish to enjoy their remaining active years. People in this group who wish to do this kind of work are already often involved in their communities, as members of clubs, societies and charities so the scheme should be dropped immediately.

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

- A Under this scheme, charities may find it harder to recruit volunteers.
- B Hospitals should be given more money to recruit nursing staff.
- C Many retired people are very enthusiastic about this new scheme.
- D New technology is often bewildering to those of retirement age.
- E Most clubs and societies welcome members of all ages.

- 8 The percentage of students who pass their school leaving examinations increases year by year. In addition, more and more students achieve the highest grade. It would be surprising if the innate abilities of human beings were improving from one generation to the next, so there is no reason to think that today's students are more intelligent than their parents were. But this should not lead us to conclude that _____, because it is possible that improvements in education make schools more successful at helping students to achieve their intellectual potential.

Which of the following phrases, inserted in the blank space, most **logically completes** the passage?

- A those who fail are unintelligent
 - B examination papers are being made easier
 - C intellectual skills are the only important ones
 - D parents do not help students with their studies
 - E today's examinations are testing the same skills
- 9 In West Bengal local groups have set up nine stand-alone solar power plants that provide electricity for six hours a day. People in 130 remote Himalayan villages have been supplied with solar powered generators. Each village saves around 40 tonnes in carbon emissions each year. On Mount Kenya 'pico-hydro' schemes provide cheap electricity to more than 50 homes each. In Mongolia, small household-scale wind turbines have opened up new opportunities for work and increased the average income.

Which of the statements below is a **conclusion** which follows from the above information?

- A Producing power from renewable energy sources can be effective and beneficial.
- B Renewable energy is more appropriate for developing than for wealthy nations.
- C There is no good reason to continue using fossil fuels.
- D The benefits of renewable energy clearly outweigh the benefits of fossil fuels.
- E Renewable energy is the best form of energy for developing nations.

- 10 With the rapid growth in communications technology, it has become increasingly difficult for parents to monitor and regulate their children's access to the world around them. This means that children are now more susceptible than ever to the effects of peer pressure, as well as to the manipulation of advertisers, indeed of anyone who may wish to exploit them. For parents, therefore, the digital revolution is not without its drawbacks.

In the above argument, the phrase 'This means that' conveys which of the following?

- A The rapid growth in communications technology *is synonymous with* the exploitation of children.
 - B Children are more susceptible to peer pressure and exploitation *as a consequence of* the rapid growth in communications technology.
 - C The exploitation of children *has been accompanied by* the rapid growth in communications technology.
 - D The rapid growth in communications technology *will always be accompanied by* the exploitation of children.
 - E The rapid growth in communications technology *is defined by* the exploitation of children.
- 11 Francesca is annoyed with the price of her daily newspapers continuing to rise. They used to be 40c from Monday to Friday and \$1 on Saturday and Sunday - \$4.00 per week.

When they went up to 45c on Monday to Friday, \$1.10 on Saturday and \$1.20 on Sunday, she vowed never to spend any more per week than she did at the lower prices, so she bought only the combination of weekly and weekend newspapers which came as near as possible to, but below, the \$4 she used to pay. This meant she bought papers on 3 weekdays plus the Saturday and Sunday editions – a total of \$3.65.

The prices are now going up to 60c on weekdays, \$1.10 on Saturday and \$1.40 on Sunday. What combination of papers should she buy?

- A 3 weekdays plus Sunday
- B 3 weekdays plus Saturday and Sunday
- C 4 weekdays plus Saturday
- D 4 weekdays plus Sunday
- E 5 weekdays plus Saturday

Use the following information to answer questions 12, 13 and 14.

Barchester Hospital provides Accident & Emergency (A&E) services to the town of Barchester and the surrounding countryside. Every patient who arrives at the hospital is immediately assessed and placed into one of three categories:

- CRITICAL requiring immediate treatment to preserve life
- URGENT requiring treatment quickly but life not in immediate danger
- ROUTINE requiring treatment but no urgency, no danger to life

The manager of the A&E department keeps summary records of the number of patients in each group. For the purposes of these summary records 'critical' patients are sub-classified as those resulting from road accidents and those resulting from other causes.

The following shows the record for two weeks in July.

	Monday 1 st	Tuesday 2 nd	Wednesday 3 rd	Thursday 4 th	Friday 5 th	Saturday 6 th	Sunday 7 th	Monday 8 th	Tuesday 9 th	Wednesday 10 th	Thursday 11 th	Friday 12 th	Saturday 13 th	Sunday 14 th
Critical (road accident)	1	0	0	1	2	2	0	0	2	0	0	4	0	2
Critical (other)	0	0	0	1	0	0	1	1	0	1	1	0	0	0
Urgent	8	8	9	10	8	15	12	9	5	8	8	12	12	14
Routine	35	38	30	42	56	75	65	34	40	35	41	58	80	65

The A&E department is staffed by a team of doctors and nurses. The doctors and nurses work in 'work groups' of one doctor and four nurses. A 'work group' can deal with four 'routine' cases in an hour. 'Urgent' cases will usually take 90 minutes. 'Critical' cases take 3 hours and will usually require specialist staff drawn from other parts of the hospital. For planning purposes the department manager calculates the number of 'work group' hours of work required each day.

The receptionist estimates the waiting time (to the nearest half-hour) for routine patients by considering the number of patients currently in the waiting area. The following procedure is used:

- divide the number of routine patients by 4
- multiply the number of urgent patients by $1\frac{1}{2}$
- multiply the number of critical patients by 3
- add these results together
- divide by the number of work groups to give the expected waiting time in hours.

- 12 One Saturday evening a shift started work at 6 pm and received 30 new patients. Of these 5 were urgent and one was critical. There were four doctors working with sixteen nurses.

What was the expected waiting time, in hours, for routine patients?

- A 1
 - B 2
 - C 3
 - D 4
 - E $6\frac{1}{2}$
- 13 The staff of the department write notes about every patient they see. There are three copies of each patient's notes. One is retained in the A & E department, one is sent to the hospital central records and one is sent to the patient's family doctor. All 'critical' and 'urgent' patients have an extra copy made of their notes.

How many separate copies of notes were made on Monday 8th?

- A 104
 - B 132
 - C 134
 - D 142
 - E 176
- 14 How many 'work group' hours work were there on Thursday 4th July?
- A $13\frac{1}{2}$
 - B 23
 - C $25\frac{1}{2}$
 - D $31\frac{1}{2}$
 - E 54

15 The table below shows the cost of sending letters within the United Kingdom.

U.K. Letter Rates (second class)			
Not over	£ p	Not over	£ p
60g	0.21	400g	1.14
100g	0.35	450g	1.30
150g	0.47	500g	1.48
200g	0.58	600g	1.75
250g	0.71	700g	2.00
300g	0.83	750g	2.12
350g	0.94		
Items heavier than 750g cannot be sent second class			

A firm wishes to send each of its customers four items by second class letter mail. Each item weighs just less than 250g. It can send the items separately or put more than one item in a package.

What is the cheapest postage charge to each customer that the firm can incur?

- A** £2.69
- B** £2.83
- C** £2.84
- D** £2.90
- E** £2.96

- 16 Internet businesses that specialise in selling babies to the highest bidder have nothing to do with care and everything to do with greed and exploitation. Modern technology brings fresh dimensions to the age-old problem of the desperate desire of couples to have children and the readiness of unscrupulous people to exploit that. Therefore all selling and buying over the internet should be banned.

Which of the following is the best statement of the **flaw** in the above argument?

- A It assumes that all childless couples would buy children if they had the opportunity.
 - B It ignores the fact that there are fewer children available for adoption than in the past.
 - C It assumes that children who are adopted are not shown much love and attention.
 - D It ignores the fact that it is the buying of babies that is wrong rather than the use of the internet.
 - E It assumes that many people who use the internet have no desire to buy anything on it.
- 17 A recent study examined the practice in schools of grouping children by ability for individual subjects - known as 'setting'. Setting has been advocated as the way to raise standards in schools. The study found that setting creates a set of expectations for teachers that overrides their awareness of individual capabilities. Teachers of the brightest pupils (the top set) assumed that their pupils could learn quickly and without difficulty. The consequence of this was that some pupils became demoralised and the standard of their work declined. The bottom set, on the other hand, experienced frequent changes of teachers and a continuous diet of low level work, which also led to demoralisation as well as lack of any opportunity to improve.

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

- A Schools should not group children by ability for individual subjects.
 - B School is generally demoralising for many pupils.
 - C Teachers are insufficiently aware of the individual capabilities of pupils.
 - D Top sets never experience changes of teachers.
 - E Grouping children by ability in individual subjects does not always raise standards.
- 18 Meat eaters, in defence of their eating habits, often give the excuse that they (and we) do not have the teeth or the stomachs of natural herbivores, and therefore we must be carnivores. This is nonsense. We may not have the digestive equipment to eat raw grasses but nor do we have the teeth and digestion of predators: we are as far removed from the wolf as we are from the cow. Seeds, nuts, berries, leaves and roots are the natural diet of our closest relatives in the animal kingdom.

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

- A It is nonsense to say that we must be carnivores.
- B Seeds, nuts, berries, leaves and roots are our natural diet.
- C We do not have the teeth or stomach to eat meat.
- D We are no more like wolves than we are like cows.
- E Eating meat is a disgusting habit.

- 19 Many women complain that there is a lack of equal opportunities in sport due to sexism. But in many sports, e.g. tennis or athletics, men and women cannot compete on equal terms because of differences in speed and power. Where something intervenes to eliminate this natural disadvantage, men and women have equal opportunities to participate. For example, there are as many female as male top riders in the equestrian sport of eventing because the horse eliminates the natural strength factor. So sexist attitudes are not the reason why men tend to dominate sport – it is because most sports lack an intervening factor that eliminates natural disadvantage.

After hearing this argument, one listener made the following comment:

‘There are no Formula One female drivers in motor racing’.

If true, does the comment

- A Strongly support the conclusion of the argument.
 - B Give only a little support to the argument.
 - C Neither strengthen nor weaken the argument.
 - D Slightly weaken the argument.
 - E Seriously undermine the argument.
- 20 Many societies believe that the earlier the age at which children went to school, the better. The learning process would thus begin as soon as possible, often just after a child’s fourth birthday. However, children who are given formal teaching before they are ready for it, may show more anxiety and have lower self esteem later in their school careers than other children. Children who are pressured to learn often achieve less academically and may face more problems in their personal relationships. Therefore all children should remain at home with a parent and given a chance to play until they are seven, the age at which formal schooling begins in many countries.

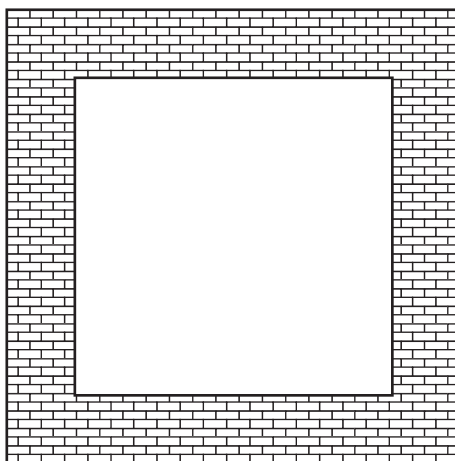
Which one the following is an **assumption** underlying the above argument?

- A All early schooling is based around formal teaching rather than play.
- B Often both parents in a family work full-time outside the home.
- C Children should be given a choice about the age at which they begin school.
- D Some children mature quicker and are keener to learn than others.
- E Lower self esteem causes more problems in later life than academic failure.

- 21 A small company supplies cooked meals for social functions. Among their dishes is baked sea bass. They do not accept orders of less than 8 for any one dish. The fish are supplied frozen in multipacks by their wholesaler. They defrost enough fish overnight to meet the next day's order. Once defrosted the fish must be used the same day. They do not mind having to defrost one fish too many but find that for an order of thirteen they have to defrost 3 fish too many. For an order of 8 or 14 they will have two fish left over. Otherwise no more than one fish is wasted.

Which of the following could explain the above?

- A The packets contain either 4 or 10 fish.
 - B Some packets have 5 fish and others 6.
 - C The fish are supplied in packets of 6 and 10.
 - D The number of fish per packet is either 6 or 9.
 - E The fish are in packets of 4 and 6.
- 22 Pedro is planning a new square lawn area which will have a 1m wide path around the edge as shown below and whose overall dimensions are an exact number of metres:

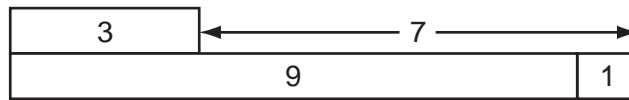


In order to calculate the cost of paving and turf, he had to work out the areas of the two sections. When he did so, he was surprised to find that the paved area was exactly 1m^2 less than the grass area.

What was the area of grass?

- A 9m^2
- B 25m^2
- C 49m^2
- D 51m^2
- E 144m^2

- 23 The Grand Elder of the Mtolu people helps them build their houses with the aid of three sacred measuring sticks, 1, 3 and 9 lat long, the lat being the Mtolu's unit of length. With these, laid down together in various combinations, and using none twice, he can measure any unit distance from 1 to 13 lat. For example, the method of measuring 7 lat is shown below:



There is now a pretender to the position of Grand Elder who claims to have three sticks which will measure anything from 1 to 14 lat. His sticks are 1, 3 and 10 lat long. However, he is shown to be a fraud when the current Grand Elder shows there is a distance he cannot measure.

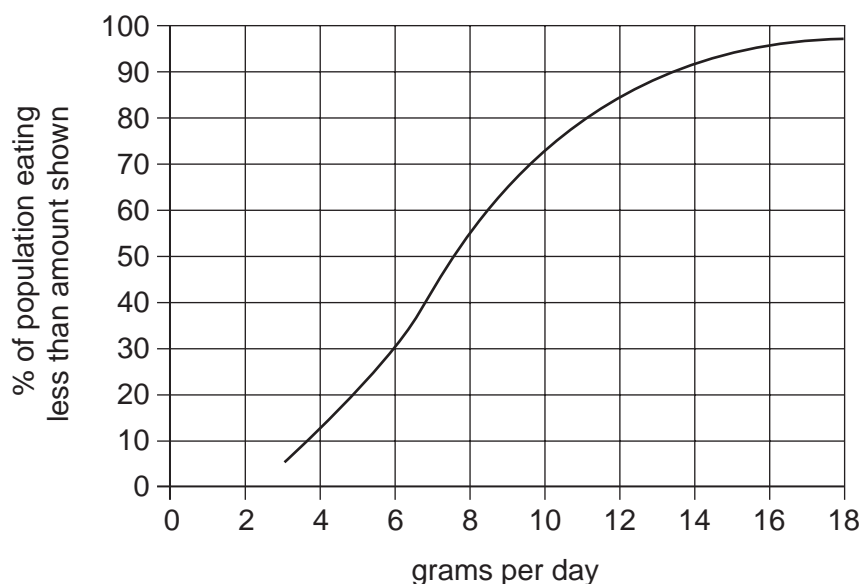
What is the impossible measurement?

- A 2
 - B 5
 - C 6
 - D 8
 - E 12
- 24 In a school examination the average mark of female students was 80%, while the average mark for all students was 77%.

Which one of the following additional pieces of information would be sufficient to determine the average mark of male students?

- A The number of female students.
- B The number of male students.
- C The total number of students.
- D The proportion of female students.
- E The difference in number between male and female students.

- 25 The graph below shows, in cumulative form, the estimated salt consumption per day of the British public. The recommended maximum daily consumption is 6 g.



To the nearest 1%, what percentage of the British population consumes more than twice the recommended daily maximum of salt?

- A 4%
 - B 14%
 - C 30%
 - D 70%
 - E 86%
- 26 In the first four years of the 21st century the growth in the use of carbon fuels has outstripped growth in the use of renewables. To turn the tide, governments will have to commit larger subsidies to the development of renewable energy and raise taxes on carbon fuels. Few governments seem willing to do either.

Which of these is a **conclusion** that could be drawn from the above claims?

- A An increase in taxes would have the effect of reducing carbon fuel consumption.
- B If governments do not act soon to find an alternative source of energy supplies, carbon fuels will begin to run out.
- C Taxing carbon fuel is necessary to fund research into renewable energy.
- D Subsidies for research and higher taxes to fund them would not be acceptable to the voters.
- E Carbon fuel consumption is likely to go on exceeding the use of renewables in the immediate future.

- 27 In an argument there must be a conclusion, and one or more reasons given to support the conclusion.

From the above definition, which of the following is most obviously an **argument**?

- A Tuberculosis is the world's biggest infectious killer. The new, accurate T SPOT-TB test for tuberculosis should catch more carriers of the disease before they become infectious.
 - B Mobile phones should soon have a delayed text message safety feature. This will allow young people to text information about where they are going and who with, but cancel the text if they arrive home safely.
 - C If you want to influence environmental policy, you should protest noisily outside government buildings. Public protest puts politicians under pressure and has more effect than sweet talking them.
 - D A computer virus which can steal exam papers has been discovered in Beijing. Anyone who can write such a virus clearly does not need it.
 - E Many guide dogs for blind people are themselves very short sighted. In the UK, these dogs are routinely screened for eye problems. Dogs generally rely on smell rather than sight.
- 28 There are many examples of animal and plant species which, though not genetically related, nevertheless display similar anatomical features. Thus, while both birds and bats have evolved means of aerial flight, they have done this independently. Such convergent evolution should not be surprising. If the conditions in which the organisms live are similar, then a useful adaptation for one species will be a useful adaptation for another. It would seem likely that, were life to have evolved on a planet with conditions similar to our own, life forms on that planet would have to share certain anatomical features with living things on Earth.

Which one of the following expresses the main **conclusion** of the above argument?

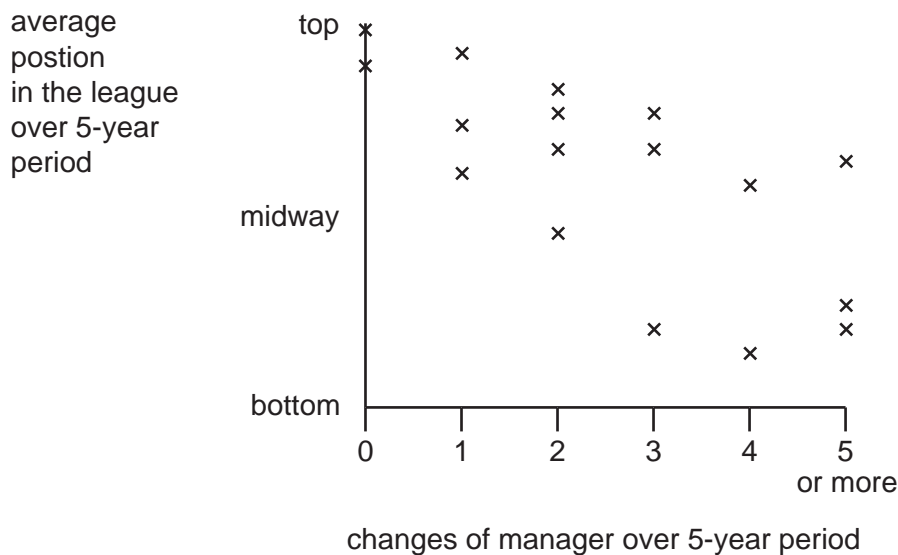
- A Birds and bats have evolved means of flight independently of one another.
- B Organisms are capable of convergent evolution.
- C A useful adaptation for one species will be a useful adaptation for another.
- D If life has evolved on a planet similar to Earth, it will probably resemble life-forms on Earth.
- E Animals and plants which are not related genetically can manifest similar anatomical features.

- 29 Mountaineering is a leisure pursuit enjoyed by a growing number of people. It is a very risky sport. Serious injuries as a result of falling are a constant hazard. The cost of health care is eating up an ever-increasing proportion of even affluent nations' resources. We cannot continue to fund the treatment of self-inflicted injury free-of-charge. Therefore people who are injured as a result of mountaineering accidents should pay for their treatments.

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

- A People who go mountaineering do so because of the risk involved.
- B Serious injuries result more in mountaineering than in any other sport.
- C Payment for self-inflicted injury would solve the problems of increasing health care costs.
- D Those injured in mountaineering accidents have inflicted the injury on themselves.
- E All people injured as a result of mountaineering accidents are able to pay for treatment.

30

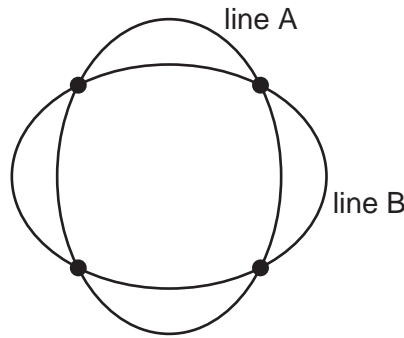


It is hard to deny that the most successful clubs are those that don't keep sacking their manager, as shown by the above graph. The graph was based on data from several clubs chosen at random from the top divisions in their respective countries. If these figures are typical then it is obviously in a club's interest to sign their manager on as long a contract as possible.

Which of the following exposes the **flaw** in this argument?

- A It is because some teams are successful that they keep their managers.
- B A team that does well in one country might not do well in another.
- C The money paid to managers varies significantly from country to country.
- D Not all clubs can afford to keep a successful manager.
- E The wealthiest clubs can buy the best managers from the poorer clubs.

- 31 The underground railway system of Chatong is shown below (in the usual simplified form). It consists of two loops. Several trains run in one direction around each loop.



There are stations at the four intersections and more stations around each loop.

The trains run to a very regular schedule, so the time from departure at one station to departure at the next on a given line is always the same. This is to make changing from one line to another easy. However, only every other train from line A is at an intersection station at the same time as a train from line B.

Which of the following would **NOT** explain this?

- A Trains take twice as long per station on line B as on line A.
 - B There are twice as many trains running on line A as on line B.
 - C There are twice as many stations on line B as on line A.
 - D Trains run in the opposite direction on line B to line A.
 - E There are an odd number of stations on line B and trains stop at every other station.
- 32 The International Morse Code uses dots and dashes (symbols) to represent letters. These are separated by gaps. There are two letters using only one symbol: E and T. A, I, M and N use two; D, G, K, O, R, S, U and W use three; and the rest of the letters use four. The combinations $\cdot\cdot\cdot$ $---$ $----$ and $\cdot\cdot-$ are not used.

A secret message with various letters was written down, unfortunately without the spaces between the letters:



What is the minimum number of letters that this message could have?

- A 5
- B 6
- C 7
- D 9
- E 20

- 33 In a yachting competition, contestants take part in 10 races. At the end of the competition, they are allowed to drop their worst finishing place and the average of the remaining 9 finishing places is taken – the contestant with the lowest average wins. If any contestant either fails to finish a race or is disqualified, this race does not count for them and their other 9 scores are averaged.

Before the 10th race the current position is published showing the average of the positions in the first 9 races with the worst discounted.

Which additional pieces of information would **NOT** be sufficient to calculate the final score for a given contestant?

- A The contestant's position in the 10th race and the average before the 10th race **without** the worst discounted.
 - B The contestant's position in the 10th race and the fact that the contestant had been disqualified in one race.
 - C The fact that the contestant won the 10th race.
 - D The fact that the contestant was disqualified in the 10th race.
 - E The contestant's position in the 10th race and their worst position in the other 9.
- 34 I live on the 6th floor of a block of flats that has 9 floors in addition to the ground floor. The lift, unfortunately, cannot be controlled. It runs continually up from the ground floor to the 9th floor and down again, taking 4 seconds to move from one floor to the next and stopping for 12 seconds at **every** floor. I usually wait for the lift to take me **up** , but I often walk **down** the stairs, which I have found takes me 20 seconds from one floor to the next.

This morning as I left my flat the lift had just arrived, so I got in. However, when it moved I discovered that it was going up, so as soon as it stopped at the next floor I got out and used the stairs instead.

How much sooner did I reach the ground floor than if I had stayed in the lift?

- A 16 seconds
- B 24 seconds
- C 36 seconds
- D 48 seconds
- E 72 seconds

- 35 The towns of Highcliff (150 m above sea level) and Lowtown (60 m above sea level) are connected by a single-track tramway 12 km long, with a passing place at exactly half way.

Trams travel at a steady speed in both directions, but whereas they travel down from Highcliff to Lowtown at 40 km/hr, they only travel up from Lowtown to Highcliff at 30 km/hr.

Trams leave both places simultaneously, at 5 minutes past each hour, throughout the day. The down-tram waits at the passing place, then continues as soon as the up-tram has passed.

At how many minutes past each hour does the down-tram arrive at Lowtown?

- A 18 minutes past.
- B 21 minutes past.
- C 23 minutes past.
- D 26 minutes past.
- E 29 minutes past.

- 36 In the 1990's, railways in the UK were sold to private companies (privatised) by the state. The railways had been taken under government control (nationalised) in 1947. The argument was that private companies would be better placed to make the system efficient. Competition would be introduced and companies unable to run an efficient service would be driven out of the business to make way for those which could. Experience of the new regime has shown that consumers find it anything but efficient. The intended competitive culture has only resulted in a fragmented, uncoordinated network in which consumers have no choice but to suffer delays, cancellations and overcrowded trains. This shows that privatisation is not the way to improve public services.

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

- A Privatisation of the railways has not yet had time to work.
- B The state railway system was never very efficient.
- C Consumers are too quick to complain about services.
- D Privatisation may improve other public services.
- E Other countries suffer problems with public transport services.

- 37 Throughout history there have always been people who believe in fatalism. In other words they believe that everything that happens is determined in advance and that the course of history cannot be altered or affected whatever we do. _____ people who sincerely hold such beliefs, and who call themselves fatalists, also strive for success or promotion or happiness, and take precautions against accident or illness.

Which of the following words, if inserted in the blank space, most **logically completes** the sense of the passage?

- A Accordingly
 - B Paradoxically
 - C Consequently
 - D Invariably
 - E Predictably
- 38 Governments do not tax aviation fuel, despite evidence that the rapid growth in air travel is causing more and more pollution, and thereby contributing to climate change. Since this is bad for everyone, airlines should be required to pay a tax on fuel. The money raised could be used to seek ways to deal with the problem of pollution. Airlines would pass on the cost by increasing airfares, thus passengers would be making a financial contribution to compensate for the damage they cause. This would be the fairest solution to the pollution problems caused by air travel.

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

- A Fewer people would fly if airfares were increased.
- B World trade would suffer if aviation fuel were taxed.
- C Scientists think that the process of climate change cannot be reversed.
- D Air travel has increased because more people travel to holiday destinations.
- E Some governments are in favour of a tax on aviation fuel, provided all countries impose it.

- 39 We are often told to be careful with money. But there are some situations where being careful with money is not sensible. It is not difficult to see why. If people want to increase their savings, they do that at the expense of that part of their income previously used for consumption. As consumption declines, so do the wages of those people who produce goods that would otherwise have been purchased. Similarly as their wages decline, so does their consumption of goods, together with any saving that they were making before. Actual incomes fall and, if the aim of increasing the proportion of income saved is achieved, the actual amount saved will be either about the same as before or even lower.

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

- A Incomes decline to the extent that savings increase.
 - B Saving sometimes has consequences which are undesirable.
 - C The consequences of an increase in saving are not always fully understood.
 - D For the level of savings to increase, the level of income must rise.
 - E People should aim to maximize their savings.
- 40 Approximately 10% of people are left-handed. Given that left-handedness is genetically transmitted from parents to their children, it is a mystery why it did not die out in prehistoric times. Left-handed people have more health problems, and are at greater risk of serious injury than those who are right-handed. In prehistoric societies, in which violence and aggression would have been common, these relative weaknesses of the left-handed would have been greatly disadvantageous to survival. They would have been much more likely to sustain fatal injuries in a fight, or to suffer serious illness at an early age. Thus they would have been at risk of dying before they had children, which would reduce the chance that the characteristic could be passed on to future generations.

Which of the following could **explain** why the characteristic of left-handedness has not died out?

- A In prehistoric societies less than 10% of people were left-handed.
- B Left-handed people are generally more artistic than those who are right-handed.
- C In prehistoric societies those who suffered from poor health generally died when very young.
- D In hand-to-hand combat, left-handers have the advantage of surprise over right-handers.
- E Many uncommon characteristics, for example colour blindness, are genetically transmitted.

- 41 Over a year a firm monitored the attendance record of its 8 employees and recorded the following information on the number of days there was just one person absent, two people absent and so on.

Number of absentees	Days
1	40
2	10
3	3
4	2
5	1
6 or more	0

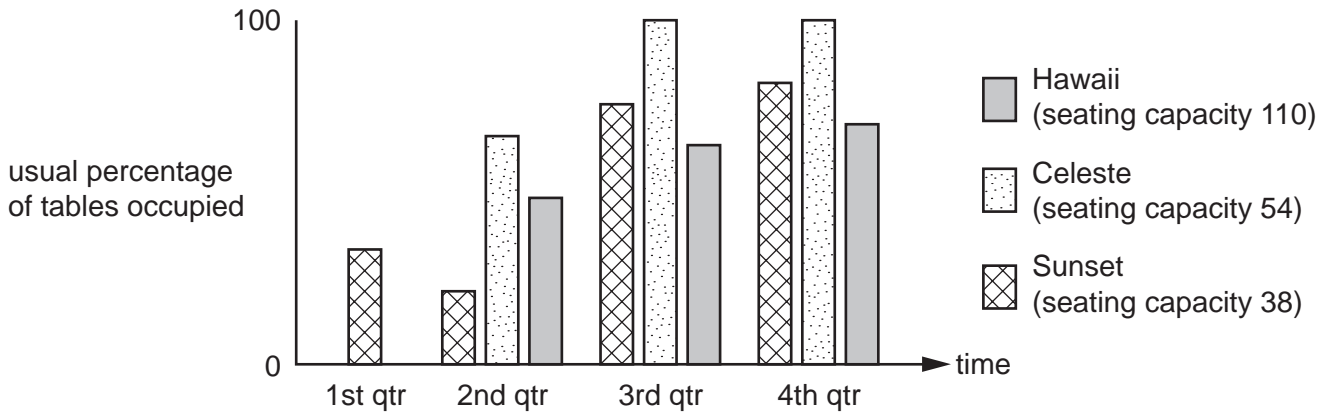
Absences of each individual were also recorded, but the details for employee Harriet were lost.

Employee	Days absent
Anita	10
Barry	6
Chuck	16
Desmond	12
Ethel	20
Francis	0
Gertrude	2
Harriet	?

On how many days was Harriet absent?

- A 0
- B 6
- C 10
- D 16
- E 20

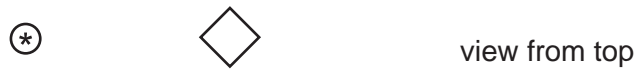
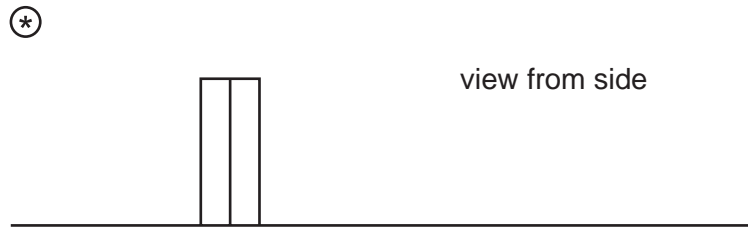
- 42 Until March last year the Sunset restaurant was the only restaurant in Dock Street. Then two other restaurants opened very close by, the Hawaii and the Celeste, both of which quickly became popular, especially the Celeste which brought in a world-famous chef. The owner of the Sunset, which was already doing badly due to residents moving out of the district, was worried that the competition would close his business down. However, figures over the year for all three restaurants were encouraging:



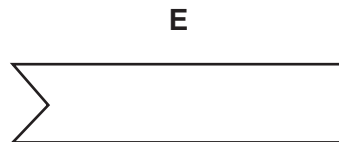
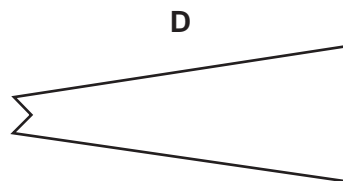
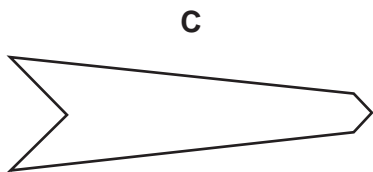
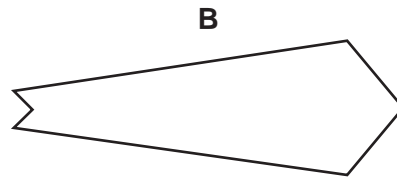
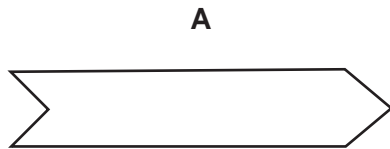
Which of the following could explain the improvement in business at the Sunset Restaurant in the second half of the year?

- A The Sunset only lost customers when the other two restaurants first opened.
- B The Sunset is an older, more traditional restaurant than either of the others.
- C Many people were turned away from the Celeste if they had not booked a table.
- D The Celeste and Hawaii opened their doors in the same month.
- E It is easier to fill a small restaurant than a large one.

43 The drawing below shows the relative positions of a vertical square section rod and a small, bright light.



Which of the following represents the shape of the shadow of the rod on the ground (not to scale)?



- 44** In 2001 John applied for admission to two universities to study history – one in the Irish Republic and one in the UK. The two countries had different point systems shown below. John received the following offers. The UK university offered him a place if he got 24 or more points for his Advanced Level grades and minimum grade B in history. The Irish university offered him a place if he got 500 points or more.

Irish Points System		UK Points System	
Advanced Level Grade	Points	Advanced Level Grade	Points
A	190	A	10
B	160	B	8
C	130	C	6
D	100	D	4
E	70	E	2

John took 3 Advanced Levels and his results enabled him to take up his place at the UK university but not at the Irish university.

Which of the following further pieces of information would definitely be sufficient to determine what combination of grades John achieved?

- A** His UK points total.
- B** His highest grade.
- C** His Irish points total.
- D** His lowest grade.
- E** His grade in history.

45 Sometimes an unfortunate error appears in the notes to help fill in tax forms. Here is an example.

Type of Income	First £1,960 of all income	Next £28,540 of all income	Remainder of all income
Pay, pension, profit	10%	22%	40%
Interest	10%	20%	40%
Dividend	10%	10%	32.5%
Taxable lump sums	10%	22%	40%
Gains on life insurance	22%	22%	40%
Capital gains	10%	20%	40%

Example showing amounts taxed at each level.

	Income	First £1,960 of all income	Next £28,540 of all income		Remainder of all income
		10%	22%	10%	32.5%
Pay	£22,385	£1960	£20,425		
Interest	£8,200			£8,115	£85

This table contains one error. Which of the following is it?

- A One of the types of income.
- B The amount of income.
- C The arithmetic.
- D A percentage rate in the table.
- E Use of the wrong column in the table.

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