



CAMBRIDGE ASSESSMENT

# Thinking Skills Assessment Oxford

4502/11

Wednesday 2 November 2011

1 hour 30 minutes

## SECTION 1 Thinking Skills Assessment

### Instructions to Candidates

Please read this page carefully, but do not open this question paper until you are told that you may do so.

A separate answer sheet is provided for this section. Please check you have one. You also require a soft pencil and an eraser.

Please complete the answer sheet with your TSA candidate number, centre number, date of birth and name.

Speed as well as accuracy is important in this section. **Work quickly, or you may not finish the paper.** There are no penalties for incorrect responses, only points for correct answers, so you should attempt all 50 questions. All questions are worth one mark.

Answer on the sheet provided. Questions ask you to show your choice between five options. Choose the **one** option you consider correct and record your choice on the separate answer sheet. If you make a mistake, erase thoroughly and try again.

Any rough work should be done on this question paper.

Dictionaries and calculators may NOT be used.



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Please wait to be told you may begin before turning this page.

*This paper consists of 32 printed pages and 4 blank pages.*

- 1 11% of nurses across the country would like to leave the profession. However, this figure rises to 39% amongst nurses who are working alternating shift systems, which mix day, evening and night shifts. It was found that many nurses preferred one type of shift most of the time, whether that involved working early, late or through the night. Employers should urgently review staffing arrangements to avoid the compulsory, alternating patterns. This would make nurses' working hours more compatible with their social and family lives. A further benefit would be a reduction in the cost of training new nurses to replace those leaving.

What is the best expression of the main conclusion of this argument?

- A The health service should adapt shift patterns to suit nurses in order to retain staff.
  - B Alternating shift systems cause nurses to want leave the health service.
  - C Many nurses prefer a regular pattern of work.
  - D Some nurses would like to leave the profession no matter what their shift pattern.
  - E 61% of nurses prefer alternating shift patterns.
- 2 To play a football pools game, participants must select four matches from the fifty on the coupon. Points are scored depending on the result of each match as follows:

If the home team wins, the participant scores 1.0 point

If the away team wins, the participant scores 1.5 points

If the match is a draw, the participant scores 3.0 points

Which of the following total scores for the four matches is **not** possible?

- A 8.5 points
- B 9.0 points
- C 9.5 points
- D 10.0 points
- E 10.5 points

- 3 Some recent films have been very expensive to make, but have not been the big box-office hits that would have justified the expense. At the same time, there have been films made very cheaply which have been received with both huge critical and popular acclaim. Indeed, some directors who have made successful low-budget films have gone on to make unsuccessful but expensive films. It is obvious then that if directors want to make popular films, they should stick to low budgets.

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

- A Critics are often wrong in their predictions about the popularity of films.
  - B The cost of making a film is normally greater than its original budget.
  - C The cost of a film need not be the factor that determines its popularity.
  - D The popularity of a film would justify a high level of expense in making it.
  - E The public does not necessarily know whether a film has been expensive or cheap to make.
- 4 It is clear that the world is getting warmer. The only thing that could slow down this process of global warming, and avert ecological disaster, would be an immediate switch to green technologies. If global warming continues at the present rate, some species will be unable to live in the warmer conditions. They will need to move to cooler places than they now occupy, for example closer to the poles, or higher up mountains. Not all of these species will be able to reach cooler climates, because of the long distances they would have to travel. Some of those that could move would end up in overcrowded habitats, which would make successful breeding impossible.

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

- A Most species require cool habitats for successful breeding.
- B Many species will be able to adapt to living in warmer climates.
- C Endangered species will survive if we switch to green technologies.
- D It is not possible to avert the ecological disaster caused by global warming.
- E Unless we switch immediately to green technologies, some species will not survive.

- 5 Cannabis smoking is widespread, even though it is illegal. It is also more dangerous to health than most people realise. If we want to reduce the use of cannabis, it should be legalised. People do not turn away from dangerous habits unless they are fully aware of the damage these habits can cause. We should have learnt this lesson from the example of tobacco smoking, which has declined dramatically because people have seen that it results in deaths from lung cancer.

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

- A People who still smoke tobacco are unaware that it can affect their health.
- B Unless cannabis smoking is legalised, its dangers will not be widely known.
- C If tobacco smoking had been illegal, it would have been less widespread.
- D There has been insufficient research on the damage caused by cannabis smoking.
- E Cannabis users are motivated by the fact that they are engaging in an illegal activity.
- 6 To encourage themselves to lose weight, Alma, Brigit, Cara, Danni and Evelyn each put £10 into a pot. They weighed themselves when they began and again at the end of each week. The one who had lost most weight after 4 weeks won the £50. The following chart shows their progress:

	<i>Alma</i>	<i>Brigit</i>	<i>Cara</i>	<i>Danni</i>	<i>Evelyn</i>
<i>Starting weight</i>	71kg	67kg	63½kg	66½kg	69kg
<i>Weight after week 1</i>	67kg	68kg	62kg	67kg	66kg
<i>Weight after week 2</i>	63½kg	66½kg	59kg	62kg	63½kg
<i>Weight after week 3</i>	61kg	66kg	58kg	61½kg	62kg
<i>Weight after week 4</i>	64kg	62kg	57½kg	60kg	61kg

Who won the £50?

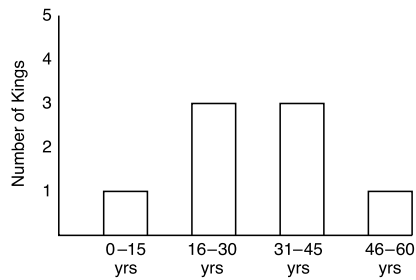
- A Alma
- B Brigit
- C Cara
- D Danni
- E Evelyn

- 7 Below is a list of the Angevin and Plantagenet kings of England and the dates of their reigns.

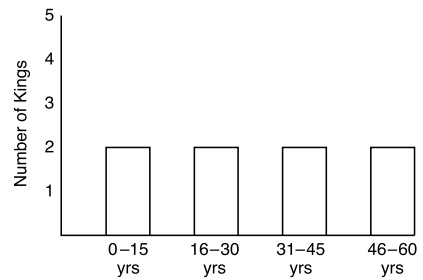
Monarch	Reign
Henry II	1154 - 1189
Richard I	1189 - 1199
John	1199 - 1216
Henry III	1216 - 1272
Edward I	1272 - 1307
Edward II	1307 - 1327
Edward III	1327 - 1377
Richard II	1377 - 1399

Which of the following bar charts represents a distribution of the lengths of the reigns of these kings?

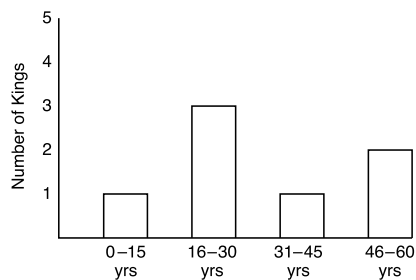
**A**



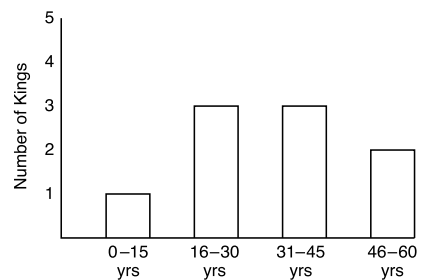
**B**



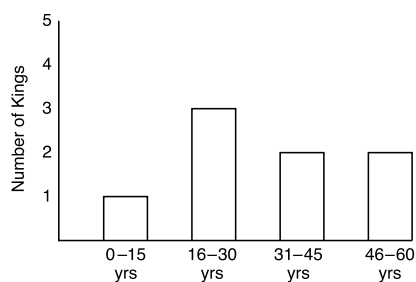
**C**



**D**

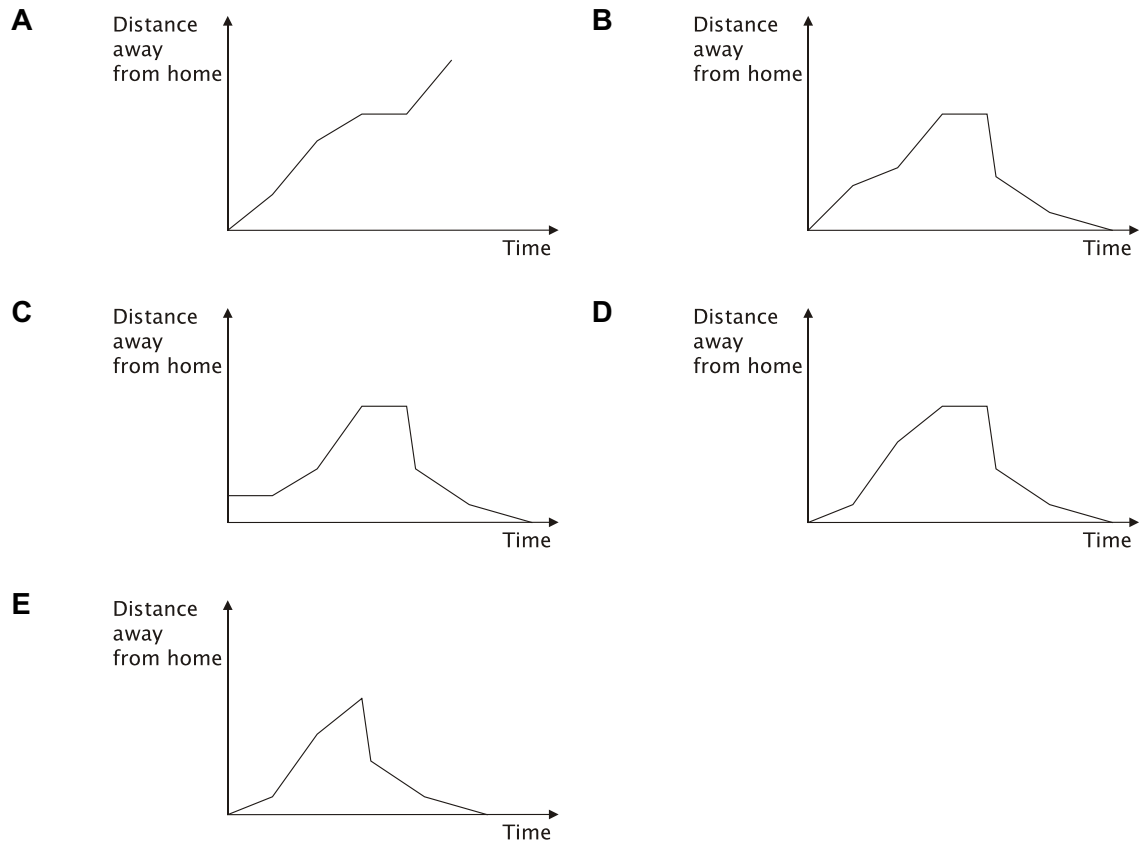


**E**



- 8 A man drives off from his house and travels through the village at a constant speed. As he leaves the village behind, his speed increases to a new constant value which he maintains until he reaches a steep hill which slows him down. At the top of the hill the driver stops for a few minutes to admire the view. He realises that he has left his picnic basket at home and so drives rapidly back along his route to collect it.

Which one of the following graphs best represents the driver's distance from home throughout his journey?



- 9 If children are sitting in rows in a classroom, the teacher can have eye contact with all of them while she is explaining something to them. This is not always possible if they are sitting in groups around tables. Also, when they look up, instead of seeing the child opposite in a group and being tempted to talk, they see the teacher. So, sitting in rows helps children to concentrate better on their work and should therefore be the standard arrangement in every school classroom.

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

- A** Rows of desks take up no more classroom space than tables.
- B** Some children are easily distracted whether they sit in rows or in groups.
- C** Sitting in groups of between four and seven makes discussion work easier.
- D** Traditionalists argue that teaching the whole class in rows is best.
- E** If desks are arranged in rows, children can all see visual aids more easily.

- 10 "There are more police officers than ever before in the history of this country. We have more police officers and more community support officers. That is why, last week, crime was down. Crime is down 30 per cent."

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

- A Community support officers don't have the same powers as police officers.
  - B Crime levels can be measured in different ways.
  - C Crime could have fallen if there had been no increase in policing.
  - D The fact that crime was down last week does not mean it will stay down.
  - E Having more police officers may mean more crime is being detected.
- 11 The differences between human beings are sometimes more striking than the similarities. There is a minority of people who, driven by a competitive urge to be the first or the best, undertake ambitious expeditions involving severe physical deprivations, high risk of fatality, and extreme isolation. Compare these people to the majority who prefer an easy, risk free life of comfort and we can see that one human being can be as different from another in their behaviour as two different species of animal. Any attempt to form general rules about human behaviour needs to bear this variation in mind.

Which one of the following best expresses the conclusion of the passage above?

- A Members of the human race can be as different in their behaviour as two separate species of animal.
  - B Humans who take risks in the interests of achieving unusual feats are untypical.
  - C Variation in human behaviour makes it difficult to generalise.
  - D Differences between people can be more striking than similarities.
  - E Human beings are superior to all other animals.
- 12 Jars of Bestcaff coffee weighing 200g are normally £2.50 at Kostless and Savemore, but both supermarkets have a special offer this week:

KOSTLESS BESTCAFF 80p OFF	SAVEMORE BESTCAFF 25% EXTRA FREE
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By how much per kilogram is Kostless's offer better value for money than Savemore's?

- A £1.50 per kg
- B £4.00 per kg
- C £7.00 per kg
- D £8.50 per kg
- E £16.00 per kg

13 The table shows the areas of the countries of the European Union.

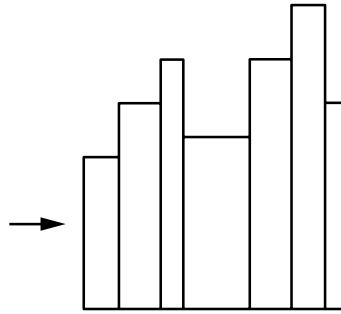
<i>Country</i>	<i>area (sq km)</i>	<i>% of EU area</i>	<i>population density (people/sq km)</i>
Austria	83858	1.90	99
Belgium	30510	0.70	344
Bulgaria	110912	2.50	70
Cyprus	9250	0.20	84
Czech Republic	78866	1.80	131
Denmark	43094	1.00	126
Estonia	45226	1.00	29
Finland	337030	7.60	16
France	643548	14.60	99
Germany	357021	8.10	231
Greece	131940	3.00	84
Hungary	93030	2.10	108
Ireland	70280	1.60	60
Italy	301320	6.80	196
Latvia	64589	1.50	35
Lithuania	65200	1.50	52
Luxembourg	2586	0.10	181
Malta	316	0.00	1261
Netherlands	41526	0.90	394
Poland	312685	7.10	122
Portugal	92931	2.10	114
Romania	238391	5.40	91
Spain	504782	11.40	87
Slovakia	48845	1.10	111
Slovenia	20253	0.50	99
Sweden	449964	10.20	20
United Kingdom	244820	5.50	246
<b>European Union</b>	<b>4422773</b>	<b>100.00</b>	

What is the minimum number of countries needed to make up at least 50% of the total land area?

- A 5
- B 6
- C 7
- D 11
- E 22



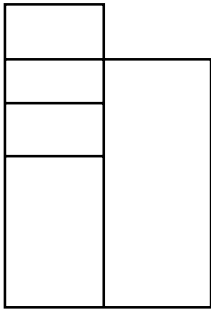
- 14 There are seven books on my shelf, which are of various sizes. When I look at them straight on I see the following picture:



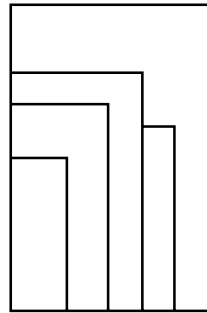
I now look at them from the left-hand end (in the direction of the arrow).

Which one of the following diagrams is **not** a possible view when seen from the left-hand end?

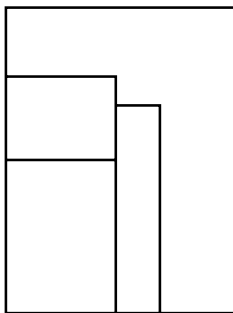
**A**



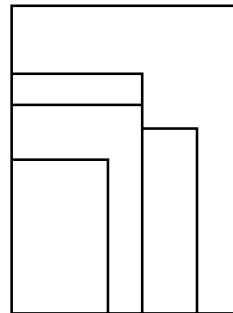
**B**



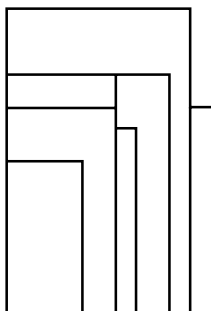
**C**



**D**



**E**



- 15** Similar effects have similar causes. The problem is deciding when one set of effects sufficiently resembles another to infer a similar cause. You say that the universe resembles a man-made object like a house, so its cause must also be similar, an intelligent designer, resembling human beings. But is the universe so like a house? It seems to resemble an animal or vegetable just as closely, so why should its origin not lie in reproduction or some vegetative process? The universe contains many classes of effects and objects, all with their different causes. There seems to be no compelling reason for concluding that the universe as a whole resembles one of these classes of effects or objects more closely than another.

Which one of the following is a conclusion that can reliably be drawn from the above reasoning?

- A** The universe bears no resemblance to a man-made object like a house.
  - B** The inference that the universe and man-made objects have similar causes is not justified.
  - C** The world resembles a vegetable more closely than a house.
  - D** The universe is not the result of intelligent design.
  - E** The most likely origin of the universe is a reproductive process.
- 16** At first glance, there is no phenomenon creepier than crop circles - huge geometric designs that appear in fields overnight seemingly without cause, explanation or reason. UFO enthusiasts are quick to supply all three, by attributing the patterns to alien visitors seeking to communicate with humans, using laser beams or other advanced technology to flatten the crops. These fanciful claims can fortunately be dismissed thanks to two quite mundane observations. Firstly, ordinary Earth-born individuals have repeatedly demonstrated how to produce the effects with nothing more elaborate than a rope and a plank. Secondly, there is a clear parallel for the phenomenon in the form of urban graffiti. Sneaking into fields to make crop circles is simply a rural variation of a widespread and well-documented human urge.

Which one of the following is an implicit, underlying assumption that is made by the above argument?

- A** Where two explanations compete we should accept the more ordinary one.
- B** There is nothing difficult or technical about producing crop circles.
- C** Alien visitors would not try to communicate with humans by flattening crops.
- D** No visits from intelligent aliens have as yet been documented.
- E** The appearance overnight of huge geometrical designs is creepy if it can not be explained.

- 17 When you install a burglar alarm in your home, you do so presumably because the cost of the alarm is less than the expected benefits. The cost of a burglary, if one occurs, is likely to be much higher than the cost of fitting an alarm. A clearly visible box on an outside wall of an alarmed house alerts and discourages potential thieves. Because your house is less likely to be burgled, your neighbour's house may be more vulnerable. Therefore, while there may be little impact on overall crime levels, expensive security devices reduce crimes against those with the devices but increase crimes against those without.

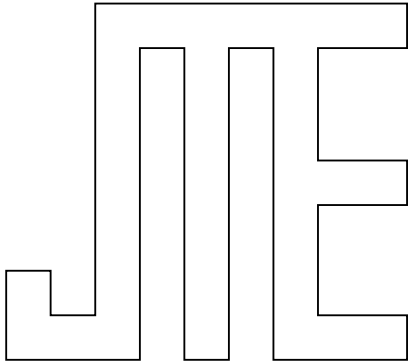
Which one of the following, if true, would most weaken the above argument?

- A For similar houses, a higher percentage of those without intruder alarms are burgled than those with alarms.
  - B As the percentage of houses with intruder alarms increased from 40% to 90%, house burglary rates fell by 60% and there was a rise in street muggings of 100%.
  - C Burglars perceive an alarm as a signal that there are items well worth stealing in a house, while no alarm indicates less valuable contents.
  - D Only 60% of houses with alarms set the alarm every day.
  - E Burglars know that 25% of all visible alarm boxes are fakes, but cannot tell the fake from the genuine.
- 18 Dates may be written in an eight digit form. For instance, 19 January 2005 may be written 19-01-2005.

In what year will the next date occur for which all eight digits are different?

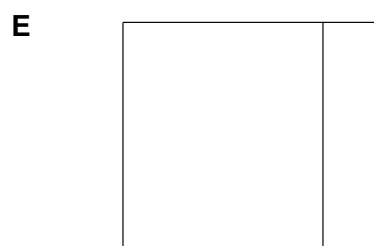
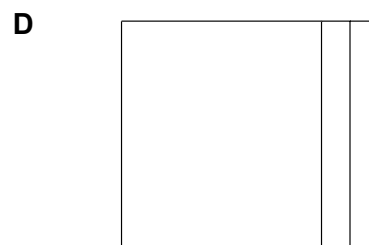
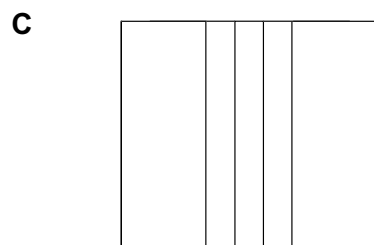
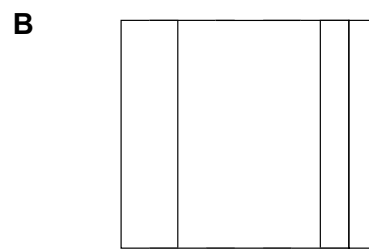
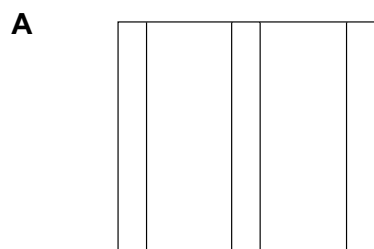
- A 2013
- B 2134
- C 2145
- D 2345
- E 2456

- 19 This is the view from above of the large three-dimensional logo situated in the forecourt of the head office of Justin Thyme Enterprises:



It was sculpted from a single cube of marble, and has a uniform cross-section from top to bottom.

Which of the following is **not** a possible side view of the logo?



- 20 The table below, from a newspaper, shows how much money (\$) you will need at various points in the future to buy items costing \$1000 today, depending on the annual rate of inflation.

Years	Average yearly rate of inflation			
	4 %	6 %	8 %	10 %
5	1217	1338	1469	1611
6	1265	1419	1587	1772
7	1316	1504	1714	1949
8	1369	1594	1851	2144
9	1423	1690	1999	2358
10	1480	1791	2159	2594
20	2191	3207	4661	6728
30	3423	5743	10063	17449
60	10520	32988	101257	304482

Raoul has just bought a new car for \$10 000. He expects this car to last him 8 years, when he will buy another equivalent model. He puts \$10 000 into a bank account ready to pay for the next car. The price of cars rises with inflation at 8% and his savings only earn interest of 6%.

How much will he need to add to his savings when he needs to buy his new car?

- A \$ 1612
- B \$ 2570
- C \$ 5338
- D \$ 5940
- E \$ 8510

- 21** It would be a good idea if the police force was separated into two divisions, one for proper policing i.e. protecting citizens and upholding law and order, and the other for road traffic. This second division could be combined with traffic wardens as basically they are doing a similar job: obtaining money from road users. Perhaps then there would be a proper focus put on catching criminals and protecting the law-abiding public, and we would have a police force doing the job they were actually intended to do.

Which one of the following best describes the flaw in the above argument?

- A** It overlooks the fact that many traffic offences are both criminal and a serious danger to the public.
  - B** It rests on the false assumption that the police do not protect citizens or catch criminals.
  - C** It ignores the fact that traffic wardens and the police have different duties and different powers.
  - D** It wrongly equates protecting citizens with catching criminals.
  - E** It implies that the police once did the job they were supposed to do.
- 22** If you practise playing a musical instrument, your playing will get better. I have not practised playing the piano, so my playing has not got better. I have an exam in two month's time. So I must practise every day if I want to do well.

Which of the following most closely parallels the reasoning in the argument?

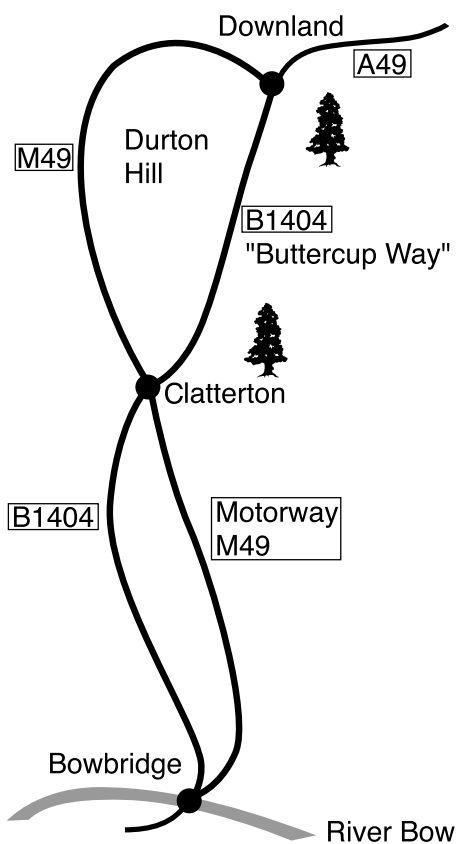
- A** If you practise playing the cello your playing will get better. Dawn has not practised much but her playing has got better so she must have done enough. She may even pass her Grade III exam next month.
- B** If you work hard at a sport, you will become better. I have not worked hard at my trampolining, so I have not become better. There is a competition next month. So I must work hard if I want to do well.
- C** If you work hard at running you will get faster. I have worked hard to get faster, and I have started winning races. There is a race next week. If I want to win it I must keep practising.
- D** People who practise a craft get better at that craft. All master craftsmen and women have put long hours of practice into their art. It is impossible to become an expert without practising.
- E** Practise makes perfect. I have practised hard on my violin so I should soon be perfect. I have a competition coming up soon which I fully expect to win.

**23** Legislation is needed in order to prevent the abuse of genetic testing by insurance companies. New genetic tests may reveal how likely an individual is to suffer from certain debilitating or fatal conditions in later life. Without legislation, insurance companies might make such tests compulsory and make those at risk pay more for insurance. This would be unfair. We do not choose our genes; we are born with them. People should not be penalised for things over which they have no control.

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

- A** Kylie did not deliberately get her accounts wrong, but she should pay the fine anyway. She should have made sure the accounts were right.
- B** Some people have lost everything in the flood. Their insurance companies are responsible for their losses. Therefore the Government should not help out.
- C** Philip should not receive any help paying his debts, however sorry one may be for him. He knew in advance that his business venture was very risky.
- D** Late payment normally incurs a fine. But Jamuna's payment was held up because postal workers were on strike, so she should not be made to pay the fine.
- E** Three people were not properly informed of possible financial losses when they joined the scheme. Their financial advisors should lose their professional licences.

- 24 As part of a journey, I must travel from Bowbridge to Downland. I can choose either the motorway (known locally as 'the road to hell') or the old road known as Buttercup Way. On the motorway I average 60 mph, on the old road I average 40 mph. I can change from one to the other at Clatterton where they cross.



The distances by the two roads are as follows:

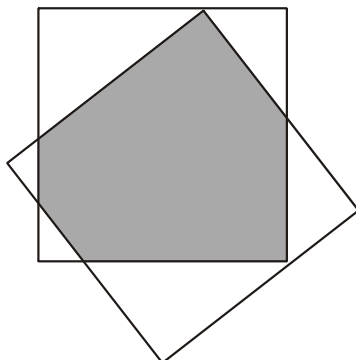
	<i>Motorway</i>	<i>Buttercup Way</i>
<i>Bowbridge / Clatterton</i>	35 miles	30 miles
<i>Clatterton / Downland</i>	35 miles	20 miles

If I take the fastest route, what will be the time saving over the slowest route?

- A 5 min
- B 10 min
- C 15 min
- D 20 min
- E 30 min

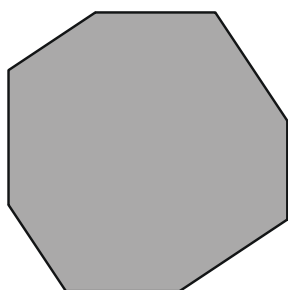


- 25 Various shapes may be made by overlapping two transparent squares, for example the dark shaded hexagon shown below:

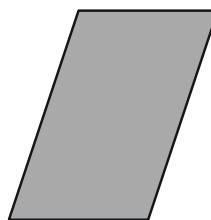


Which one of the following shapes cannot be made as the overlap of two transparent squares?

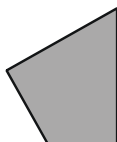
A



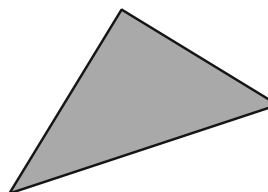
B



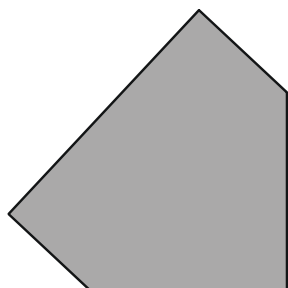
C



D



E



26 This table shows how household sizes in Great Britain changed between 1961 and 1991.

<i>Percentages</i>				
	<i>1961</i>	<i>1971</i>	<i>1981</i>	<i>1991</i>
<i>Household size</i>				
<i>1 person</i>	14	18	22	27
<i>2 people</i>	30	32	32	34
<i>3 people</i>	23	19	17	16
<i>4 people</i>	18	17	18	16
<i>5 people</i>	9	8	7	5
<i>6 or more people</i>	7	6	4	2
<i>Total number of households (millions)</i>	16.2	18.2	19.5	21.9
<i>Average household size (number of people)</i>	3.1	2.9	2.7	2.5

What was the change in the percentage of households with fewer than 3 people between 1971 and 1991?

- A 7
- B 8
- C 10
- D 11
- E 17

- 27 Britain's property market is in the midst of a full-scale slump with house prices falling at their fastest rate in 15 years, according to a new study. But why is there an assumption that continuing rises in house prices is a good thing? Why not see the fall in house prices as a welcome change? House prices as a percentage of income are grossly overpriced. Low interest rates and cheap mortgages have led to the property market, particularly in London, being overvalued. Surely this will make houses more affordable. First time buyers will be happy beneficiaries of a housing slump. Others finding a silver lining in the gloom are those in rural communities for whom a house had seemed simply out of reach.

Which one of the following is the main conclusion of the above argument?

- A Low interest rates and cheap mortgages have led to an overvaluing of the property market.
  - B It is always assumed that continually rising house prices are a good thing.
  - C Rural communities will no longer find buying a house out of reach.
  - D Surely a slump in prices will make buying a house more affordable.
  - E We should view the fall in house prices as a good thing.
- 28 The average life expectancy in working class areas of London was significantly higher than in similar areas in other major cities in the first half of the nineteenth century. In London during this time drinking tea had become a part of daily life amongst the poor. The reason for this was a combination of availability and cost. Boats bringing tea to the country docked in London and a certain amount was sold off directly to local markets. At this time in the rest of the country tea was still regarded as a luxury, consumed only by the better off.

Which one of the following conclusions is best supported by the passage above?

- A The drinking of tea increases life expectancy.
- B Everyone ought to include tea in their daily diet.
- C There may be properties of tea which are beneficial to health.
- D The growing popularity of tea led to a decrease in the consumption of more harmful drinks, such as gin.
- E For the poor tea was a substitute for food.

- 29** A recent study by a drugs company found that the amount of money spent on a specific pill used for the treatment of Alzheimer's disease in the UK showed wide regional variation. Alzheimer's is a condition associated with the ageing process. In some areas the expenditure was as low as £1 per head of the population over 65 whereas in others it was as high as £10 per head. These pills are the most effective treatment for this condition that is currently available. Therefore, this is another example of 'post-code lottery' where the effectiveness of treatment for a health condition will depend upon where you live.

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

- A** The pills are very successful in halting the progress of Alzheimer's disease.
- B** The drugs company that did the research doesn't have a vested interest in selling the pills.
- C** There are no regional variations in the incidence of Alzheimer's in the 65+ age group.
- D** There are no regional variations in the number of people in the 65+ age group.
- E** It is not possible to develop Alzheimer's disease below the age of 65.
- 30** All the teams in a local football league have now played each other once this season. Below is the current league table:

	<i>Played</i>	<i>Won</i>	<i>Drawn</i>	<i>Lost</i>	<i>Goals For</i>	<i>Goals Against</i>
Rovers	4	4	0	0	7	2
United	4	2	1	1	2	1
County	4	1	2	1	4	4
Wanderers	4	1	0	3	3	5
City	4	0	1	3	1	5

What was the result of the match between United and County?

- A** United 0 County 0
- B** United 1 County 0
- C** United 0 County 1
- D** United 1 County 1
- E** United 2 County 1

- 31 In a modified form of a popular game, each of two players at any turn may put either 'O' or 'X' as she chooses in any blank square of a 3 by 3 grid. She wins if she thereby completes a line of three identical symbols. A player is faced with this situation:

	X	
X		

Which one of the following moves ensures that she can win at her next move?

A

O	X	
X		

B

	X	
X	O	

C

	X	
X		
		O

D

	X	
X		
		X

E

	X	O
X		

- 32 The following table shows the results of a test on smokers trying to quit. Of 240 people, half were given nicotine tablets and half were given a placebo (a substance containing no medication).

	<i>Failed to quit</i>	<i>Succeeded in quitting</i>	<i>Total</i>
<i>Nicotine</i>	64	56	<b>120</b>
<i>Placebo</i>	96	24	<b>120</b>
<i>Total</i>	<b>160</b>	<b>80</b>	<b>240</b>

The researchers assumed that: of the smokers given nicotine tablets, the same proportion would have quit without using them as would have quit using the placebo.

How many of the smokers that were given the nicotine tablets can the researchers conclude had quit due to taking the tablets?

- A 16  
 B 32  
 C 39  
 D 40  
 E 45
- 33 In a high speed police chase, police drivers sometimes lose sight of the car they are chasing. But that's no reason to give up. All they have to do is take the first left, and then the first left again. Pursued drivers are likely to keep taking turns as they come up, as this seems instinctively like the best way to lose someone who is following them. They are not going to turn right as this involves waiting and checking for oncoming traffic. Therefore take a couple of left turns and the police car will soon have their criminal in sight once again!

Which of the following, if true, would strengthen this argument?

- A Car chases tend to end with the pursued driver losing control of their vehicle.  
 B Drivers in TV car chases tend to turn left rather than right when pursued.  
 C Police drivers are usually able to sustain faster average speeds over a length of time than other drivers.  
 D Police drivers usually request overhead assistance from a helicopter when chasing criminals in cars.  
 E Two left turns might take the criminal where they want to be going.

- 34** The museum has decided to spend money in the hope of staying profitable and, therefore, remaining open. It has opened an expensive new front hall, which is very big and well planned, and will undoubtedly impress new visitors. For serious students, however, it has nothing to offer that was not there before. All the scholars who want to do so already use the museum, they will continue to come however artistic the displays may or may not be. So, it was a waste to spend so much money on appearances, the money should have been spent on improving conditions for those who come to study.

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

- A** The museum cannot be sure that new visitors will be attracted by its new front hall.
  - B** There is no evidence that visitors to museums are interested in the conditions in which the contents are displayed.
  - C** If scholars will continue to come anyway, the museum will not make more money by improving their conditions.
  - D** There is no contact or sympathy between serious scholars and members of the general public in museums.
  - E** It is regular users, and not potential new visitors, to the museum who deserve to be rewarded.
- 35** England is set to become the most crowded country in Europe as its population grows by a third over the next 50 years, according to official projections. There are currently some 50 million people in England, but in 50 years this could hit 68 million - 1,349 for every square mile. Opposition political parties, who have obtained the data from the Office for National Statistics, demanded restrictions on migration levels. The opposition spokeswoman for immigration said "This demonstrates the real pressure public services are being put under as a result of the failed immigration policy of the present government, which the electorate are increasingly recognising." Continued unrestricted population growth will lead to extremist political parties benefiting at the ballot box.

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

- A** Extremist parties will gain political capital from the growth in population.
- B** England is set to become the most crowded country in Europe over the next 50 years.
- C** Public services will come under increasing pressure as a result of immigration policy.
- D** The electorate are dissatisfied with the government's immigration policy.
- E** Opposition parties believe immigration is the sole reason for the projected rise in population in England.

- 36 When my father ran a pizza shop he sold pizzas for a fixed amount plus an amount proportional to the ingredients used. A regular pizza uses twice the ingredients of a mini one and a large pizza twice those of a regular one.

Which one of the following price scales could he have used for mini, regular and large pizzas?

- A £0.49, £1.00, £1.96
  - B £1.00, £2.00, £3.00
  - C £1.10, £2.20, £3.30
  - D £1.70, £2.00, £2.40
  - E £2.00, £3.00, £5.00
- 37 I often order items from a mail order catalogue. The charges for postage and packing (to be added to the order value) are as follows:

Order value: less than £25.00	-	£4.50
£25.00 to £49.99	-	£8.50
£50.00 to £74.99	-	£12.00
£75.00 to £99.99	-	£15.00
£100.00 and over	-	£17.50

Just before sending off my latest order, I noticed that the current catalogue offers half price postage and packing for orders of 8 or more items. My order was for 7 items, with an order value of £74.60. I could not find anything else I wanted, so I just added the cheapest item in the catalogue (priced at £1.25) to my order.

By how much did adding the extra item to my order reduce the total cost?

- A £3.25
- B £4.50
- C £4.75
- D £5.75
- E £6.25



**38** John wishes to have 500 copies of a brochure printed and is offered a choice of two price structures:

1. An equal cost for each brochure printed, regardless of number.
2. An initial fixed cost followed by a lower cost than structure 1 for each brochure.

Which one of the following sets of information would be sufficient for him to be able to decide which of the two price structures would be least expensive?

- A** The number of brochures for which the total bill would be the same by both structure 1 and structure 2.
- B** An example showing the cost of 500 brochures for structure 1 and 200 brochures using structure 2.
- C** The cost per brochure using structure 1 and the initial cost using structure 2.
- D** An example showing the cost of 200 brochures using structure 1 and 200 brochures using structure 2.
- E** The cost of 1 brochure using structure 1 and 2 brochures using structure 2.

**39** Many people who live near to mobile phone masts are worried that radiation from these masts will damage their health. Mobile phones themselves have also been suspected of emitting dangerous levels of radiation, and a report recommended that children should be discouraged from making non-essential calls. Emission of radiation from the masts is much lower than that from a mobile phone. A few seconds making a phone call is comparable to 24 hours of exposure from a mast. Radiation from both these sources is below the international guidelines as to what is a dangerous level, but no one can yet be certain if these guidelines accurately reflect the level of risk.

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

- A** People who use mobile phones are putting their health at risk.
- B** The international guidelines underestimate the risk to health from low levels of radiation.
- C** The health risk from living near a phone mast is lower than that from using a mobile phone.
- D** People who live near mobile phone masts overestimate the risks to their health from these masts.
- E** If extensive use of mobile phones is not harmful to health, radiation from a mast is unlikely to be a risk.

- 40** University education is not a matter of forcing through the largest number of graduates at the lowest possible short-term cost. This would not serve the needs of the current generation of students and, even from a narrow economic viewpoint, it would not promote economic prosperity in the long term. It is often a poor economic practice to skimp on the production costs of a product, even when you are only interested in the eventual monetary profit to be made from it. But in any event university education has wider purposes than merely the promotion of economic prosperity.

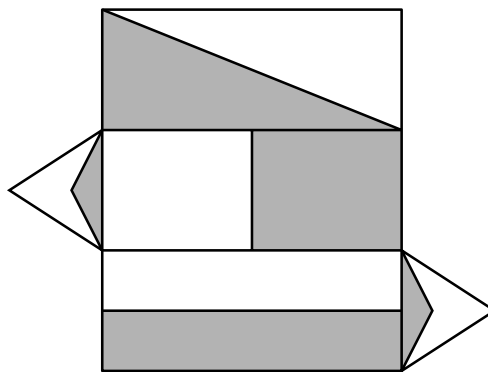
Which of the following is an underlying assumption of the above argument?

- A** The principal purpose of university education is to serve the needs of the present generation of students.
  - B** The principal purpose of university education is to promote the long term economic prosperity of the community.
  - C** The more money the manufacturer spends on the production of a product, the greater the eventual profit is likely to be.
  - D** Policies of cost-cutting are likely to reduce the extent to which the university education will achieve its overall purpose.
  - E** Universities should be managed so as to make a monetary profit, but they should also promote certain non-financial values.
- 41** The preservation of First Class sections on trains is indefensible. This is not because it is socially divisive, which it is; nor because it is very expensive, which it also is; but because it inevitably leads to a relatively poorer service in Standard Class sections of trains. Clearly, in order to attract First Class passengers it is necessary to maintain certain levels of discomfort in those compartments which cater to the great majority of travellers. There is, for example, a powerful disincentive to make more space generally available on trains, as one of the main inducements to travel First Class is to escape overcrowding and be assured of a seat. Yet, additional space would add significantly to the safety and comfort of most passengers.

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

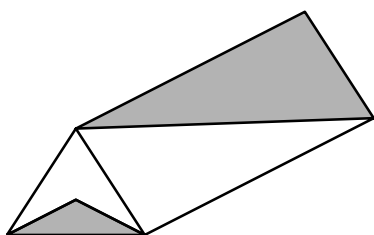
- A** More people are now using First Class sections on trains than ever before.
- B** The whole rail service benefits from the increased revenue generated by the high cost of First Class tickets.
- C** On many trains the First Class section occupies only a small proportion of the total accommodation.
- D** No one is excluded from travelling in the First Class sections of trains, provided they are prepared to pay the higher fare.
- E** Some people who travel in First Class sections of trains would not use the trains if there were no First Class sections.

42 The piece of card shown below is folded to make a box with a triangular cross-section.

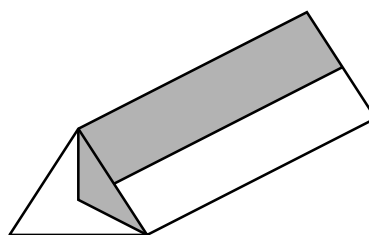


Which one of the views below can **not** be of this box?

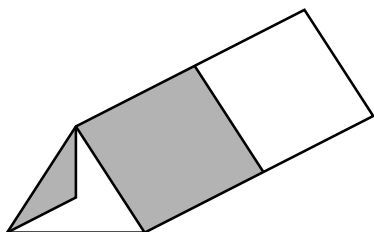
A



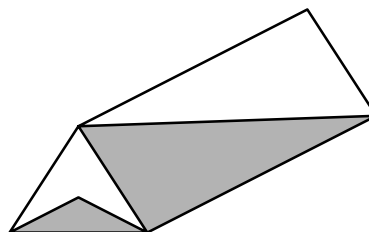
B



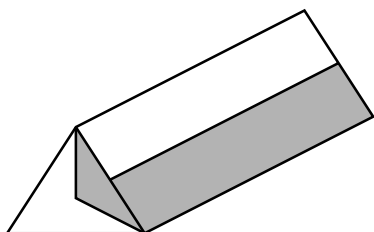
C



D



E



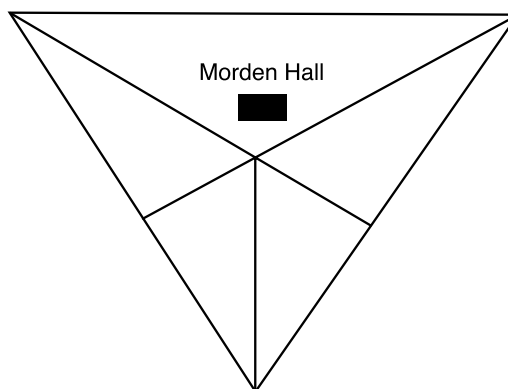
- 43 At Marland College, all 120 pupils in year 11 take two languages at GCSE. The table below shows the numbers of pupils taking each language combination.

	<i>French</i>	<i>German</i>	<i>Italian</i>	<i>Spanish</i>
<i>Mandarin</i>	9	3	2	4
<i>Spanish</i>	14	9	13	
<i>Italian</i>	13	19		
<i>German</i>	24			

What percentage of those taking Spanish are also taking French? (Give your answer to the nearest 1% if necessary).

- A 12%
- B 23%
- C 35%
- D 39%
- E 54%

- 44 The diagram below shows Morden Hall and the network of paths within the grounds.



When the owner takes his dog for a walk he always starts and finishes at the intersection outside the front door and (keeping to the paths) walks one complete triangular route.

How many different routes does he have to choose from? (Clockwise and anticlockwise around the same triangle counts as one route only.)

- A 5
- B 7
- C 10
- D 11
- E 12

- 45** Although study leave in the run up to exams is traditional, and benefits well-motivated, organised students, recent thinking suggests that it is not the best way to improve results. Some students are required to do housework or help in the family business rather than studying. Many others spend time playing computer games, watching daytime TV or hanging around with friends instead of revising. Schools which provide in-school study areas with teacher supervision and a programme of booster revision sessions are getting more A\*s and fewer Ds. It is time to ditch study leave.

Which one of the following best expresses the main conclusion of the argument?

- A** Many students do not make good use of their study leave.
  - B** Students who work hard find study leave useful.
  - C** Study leave is not the best way for students to gain high results.
  - D** Study leave ought to be abandoned.
  - E** Traditional methods of education need to be updated to improve results.
- 46** Land reform is urgently needed in the UK. It is well documented that around two-thirds of Britain is owned by just 0.3% of the population. Many of the largest estates have been in the hands of the same families for centuries, and were acquired under outdated feudal laws, often by means of aggression. If these families had any sense of social justice in the 21st century they would by now have voluntarily surrendered all but the acreage they needed for personal privacy. \_\_\_\_\_ the state should confiscate all excessive land holdings without compensation and redistribute them into the families of workers and taxpayers at affordable prices.

Which of the following phrases, inserted in the blank space, most logically completes the above argument?

- A** In the current economic climate, ...
- B** On the other hand, ...
- C** This being the case, ...
- D** Therefore, on legal grounds, ...
- E** Since they have not, ...

- 47 All trees have leaves. An oak is a tree. Therefore oaks have leaves.

Which one of the following most closely parallels the reasoning used in the argument?

- A All leaves grow on trees. That plant has leaves. Therefore that plant is a tree.  
 B All oaks have leaves. That tree has leaves. Therefore that tree is an oak.  
 C All plants have leaves. That leaf is an oak leaf. Therefore all plants are oaks.  
 D All trees have leaves. That plant has leaves. Therefore that plant is a tree.  
 E All trees have leaves. That plant is not a tree. Therefore that plant does not have leaves.

- 48 Megan pays a subscription to Probe Information Services. This is an internet service which allows her to access up-to-date information relevant to her job. The leaflet which came with her application form is reproduced below.

<i>Probe Information Services - Serving you in the Internet Age</i>		
<i>Minimum monthly charge \$5 - this gives access to all services and a \$5 credit which will be set against the actual use made</i>		
<i>Information category</i>	<i>Cost per enquiry</i>	<i>Average access and download time</i>
Financial Markets (updated every 20 minutes)	10c	30 seconds
Exchange Rates (updated hourly)	10c	30 seconds
Company News (updated twice a day)	10c	1 minute 30 seconds
Detailed Information	50c	2 minutes 30 seconds
Commodities in World Markets	10c	30 seconds
<i>Probe's charges do not include the cost of phone calls. All calls are at local rates</i>		

Megan's call charges are at local rates of 10c for up to 2 minutes and 5c per additional minute or part of a minute. In the first month, Megan seeks detailed information on 5 companies and uses the other services a total of 42 times.

How much will Probe bill her?

- A \$ 5.00  
 B \$ 6.70  
 C \$ 7.50  
 D \$ 9.95  
 E \$ 11.65

- 49 A group of Construction students must choose their specialist options from the following list:

Bricklaying, Damp-proofing, Drainage, Flooring, Joinery, Plastering, Roofing

Each student must choose three options. The available options may be combined with each other in any way, with the exception of the restrictions that Damp-proofing and Drainage together may not be combined with Bricklaying or Plastering because of timetable constraints, and that students choosing Joinery must also choose Flooring.

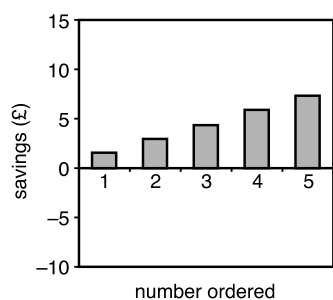
How many possible combinations including Drainage could the students choose from?

- A 7
- B 8
- C 9
- D 10
- E 11

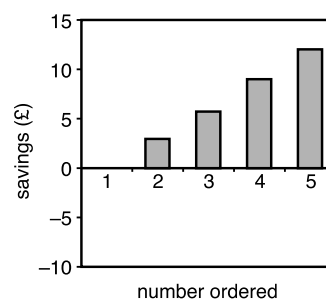
- 50 I am a member of a book club. Every month I must choose at least one book. All books are sold at a discount of £2.00 on shop prices. I pay a fixed charge for postage regardless of which books I order.

Which one of the following graphs could show the relationship between the number of books ordered in a month and the total saving on shop prices (allowing for postage charge)?

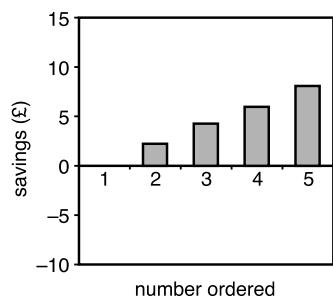
A



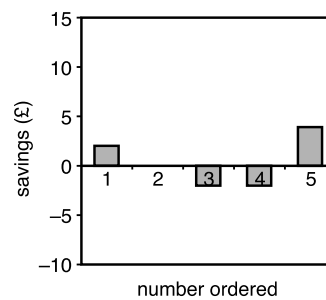
B



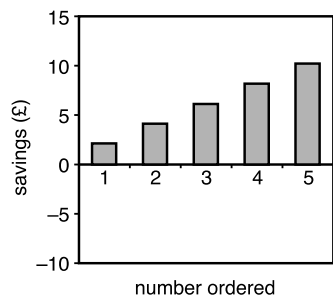
C



D



E





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