

Thinking Skills Assessment Oxford

4502/11

Wednesday 4 November 2015

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.



UNIVERSITY OF
OXFORD

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This paper consists of 39 printed pages and 5 blank pages.

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- 1 Heroin and cocaine are not the only illegal drugs with a terrible impact on global health. Counterfeit medicines can also do damage. Some of these fakes contain potentially toxic chemicals, and when taken to treat a disease they can kill. Others are like homeopathic remedies – while harmless in themselves, as they contain no active ingredients, they do not work as advertised. Efforts to tackle drug crime have prioritised illegal drugs and so have not dealt with crimes that are just as serious. This should now be remedied.

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

- A Heroin and cocaine have a terrible impact on global health.
- B Counterfeit medicines can be just as dangerous as heroin and cocaine.
- C Homeopathic remedies are not effective.
- D Counterfeit medicines may contain toxic chemicals.
- E More time and effort should be put into tackling counterfeit medicines.

- 2 A public telephone has been vandalised and will take only 50 pence coins and 10 pence coins. A woman puts £8.50 into the phone to make a long-distance call with twenty-five coins. Five 10 pence coins are returned when she finishes her call.

What combination of coins is retained by the machine?

- A Twice as many 10s as 50s.
- B One-and-a-half times as many 50s as 10s.
- C The same number of 50s and 10s.
- D Three times as many 50s as 10s.
- E One-and-a-half times as many 10s as 50s.

- 3 All European countries have seen a decline in the number of people who vote in elections. In the 2005 General Election in the UK only 61% of those eligible to vote did so. When this percentage is further broken down to show the number of people who voted for the political party that went on to form the government, the number is even lower. Of those who did vote, only 35% voted for the party that won power. It becomes clear, therefore, that the party voted into government did not have legitimacy, if 'legitimacy' is defined as the government having the support of the majority of the people.

Which one of the following represents a flaw in the argument above?

- A Those eligible to vote who do not vote forfeit the right to criticise the composition of the government.
- B A government may have the support of eligible voters who did not exercise their right to vote.
- C The responsibility for lack of legitimacy lies with non-voters, not the government.
- D The argument does not give an explanation for the decline in voting.
- E The definition of legitimacy needs to be revised in the light of low voter turnout.

- 4 Only John Lewis, the nationally adored and trusted UK retail group, can get away with the shamelessly sentimental marketing that they do. More than 100,000 people watched and re-watched on *YouTube* in the first week it was available their most popular 'Always a Woman' advertisement. If anyone else had dreamt it up, they would have been pilloried as sexist and out-of-touch. In it, John Lewis offers a politically incorrect view of modern womanhood: pair-bonding and breeding are significant milestones, they say, not making CEO of a company. Surprisingly however, figures show that the retailer has magnificently outperformed every single rival.

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

- A The British public will accept anything from John Lewis.
- B Marketing that plays on our emotions is morally reprehensible.
- C Marriage and motherhood suit women more than business achievement.
- D The number of hits on *YouTube* is a good measure of success.
- E In the right hands an appeal to sentiment can be a successful marketing tool.



- 5 In the 1920s and 1930s there were successes for extremist parties in elections across Europe. Several of these parties formed governments and were directly involved in starting the Second World War. In recent elections extremist parties were particularly successful at the expense of the more traditional parties. It is possible that this dangerous situation will get worse. Our schools must teach children about the link between extremist politics and war in order to reduce the likelihood of future wars.

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

- A Events in history inevitably repeat themselves in the future.
- B It is not the job of parents to teach children about politics.
- C Teaching about the link between extremist politics and war will cause fewer people to vote for extremist parties.
- D Extremism is the main reason that countries go to war.
- E The recent election success of extremist parties will continue to grow.

- 6 William wants to cook roast beef and potatoes for himself and four friends. From his cookbook he gets the following information:

| BEEF | Medium oven | Hot oven |
|-------------------------|--------------------------------------|--------------------------------------|
| Rare | --- | 10 minutes per 500 g |
| Medium rare | 20 minutes per 500 g plus 20 mins | 15 minutes per 500 g plus 15 minutes |
| Well done | 30 minutes per 500 g plus 30 minutes | --- |
| Allow 300 g per person. | | |

After removing from the oven, the meat should be allowed to stand for 10 minutes.

| ROAST POTATOES | Medium oven | Hot oven |
|-----------------------|--------------------|-----------------|
| | 40 minutes | 30 minutes |

William buys a joint of the correct weight and decides to cook it medium rare in a hot oven.

How long after putting the beef in the oven should he put in the potatoes, so that both will be ready to serve at the same time?

- A 25 minutes
- B 30 minutes
- C 31 minutes
- D 40 minutes
- E 50 minutes



- 7 A teacher is going to award a prize to her most deserving pupil in the current school year. She has narrowed it down to five students and must make her final judgements. She won't give the prize to anyone who has been late to her lessons more than twice. She won't give it to anyone who has failed to complete more than two pieces of homework by the deadline set. After these criteria have been met, the prize will be awarded to the student with the fewest non-A-grade pieces of work.

| Pupil | Year group | No. of lessons missed | No. of times late for lesson | No. of homeworks set | Homeworks completed by deadline | Homeworks with grade A |
|--------|------------|-----------------------|------------------------------|----------------------|---------------------------------|------------------------|
| Andrew | 8 | 4 | 1 | 60 | 56 | 58 |
| Carole | 11 | 2 | 2 | 56 | 56 | 53 |
| Edward | 9 | 6 | 2 | 59 | 56 | 58 |
| Grace | 10 | 6 | 3 | 58 | 57 | 56 |
| Ian | 11 | 10 | 2 | 54 | 53 | 52 |

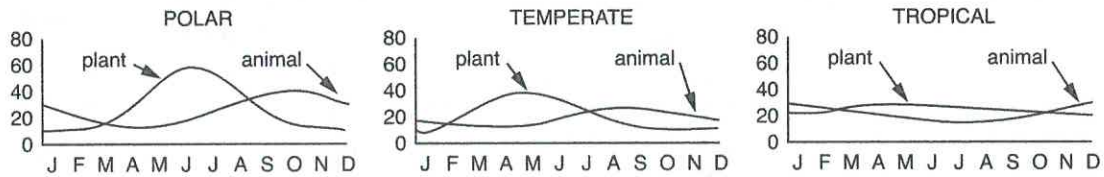
Which student will be awarded the prize?

- A Andrew
- B Carole
- C Edward
- D Grace
- E Ian

- 8 Plankton are small plants and animals present in the sea. The animal plankton feed on the plant plankton. The rate at which the plant plankton are produced depends on sea temperature and the amount of sunlight.

In tropical regions there is little variation of plankton production through the year. Variations are much bigger at temperate and polar latitudes. Plant plankton production always rises before that of animal plankton.

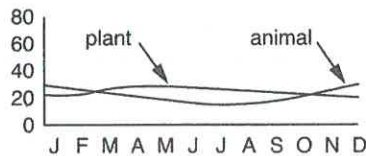
The following graphs show the production rates of plankton in the northern hemisphere:



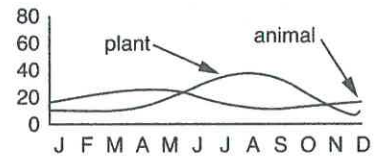
In the northern hemisphere winter is in December, January and February. In the southern hemisphere it is in June, July and August.

Which one of the following graphs provides a good representation of plankton production in the southern polar region?

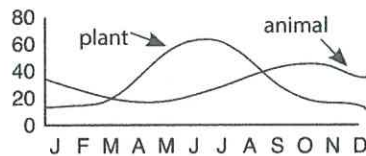
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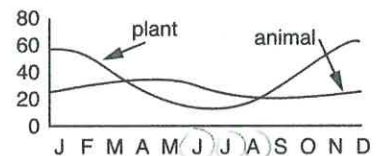
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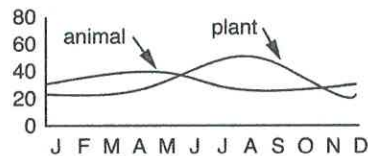
C



D



E



- 9 A study of shooting victims in Philadelphia has found that people who carry guns are far more likely to be shot than those who are unarmed. Researchers at the University of Pennsylvania looked at 677 shootings over two and a half years, taking into account various factors such as the age and socioeconomic status of those involved. The researchers concluded that armed citizens were 4.5 times more likely to get shot and 4.2 times more likely to get killed than those who were unarmed. Therefore, it is significantly safer not to carry a gun in Philadelphia.

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

- A Some of those shot were carrying concealed weapons.
- B People carrying guns have a sense of empowerment.
- C People who are at risk of getting shot are more likely to carry a gun.
- D People carrying guns are likely to overreact in potentially violent situations.
- E The bearing of arms is protected by the Second Amendment of the US Constitution.

- 10 Recurring dreams (those that you keep on having time after time) make good sense when you think of them as messages from your unconscious. Some messages are too important to send just once in case you don't understand them first time around or don't realise their importance. So, a recurring dream must contain a message that is worth repeating over and over.

Which one of the following identifies the flaw in the reasoning in the above argument?

- A Supernatural explanations for natural events do not make any sense.
- B Even if an explanation makes good sense it is not necessarily true.
- C Not everyone remembers the dreams they have had.
- D Not all dreams contain messages.
- E Sometimes we may dream that we have had a dream before.

- 11 Conspicuous consumption does not make us happy. Buying a flashy car sends the message: 'I've got so many resources, I can afford to squander them.' Paying more for organic foods signals another desirable trait: conscientiousness. We put too much effort into sending signals that don't actually impress others and cause us stress. We evolved into emotionally well-balanced individuals thousands of years ago. To be truly happy now, we should devote more time to the activities that dominated life back then: being at one with nature, being with children, or holding face-to-face conversations. We need to evaluate our lives and make sure they include many of those things we were doing 250,000 years ago.

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

- A Sending out signals to impress others is a waste of time.
- B We need to decide what is really important in our lives.
- C Our ancestors were emotionally better balanced than we are today.
- D To be really happy, we should behave more like our ancestors did.
- E Today's complex and competitive lifestyle makes us discontented and unhappy.



- 12 A market research company conducted a survey into the relative popularity of two soft drinks with the following results (all figures are percentages):

| | Age 5-15 | Age 15-25 | Age 25-35 | Age over 35 |
|----------------|----------|-----------|-----------|-------------|
| Prefer Drink A | 28 | 38 | 32 | 24 |
| Prefer Drink B | 20 | 31 | 33 | 19 |
| No preference | 33 | 12 | 22 | 34 |
| Don't know | 19 | 19 | 13 | 23 |

The same number of people were surveyed in each age group.

Which one of the following conclusions can be justifiably drawn from the results?

- A Drink A is consistently more popular than Drink B.
- B There were more people with a preference for Drink B than with no preference.
- C More people in the age group 5-15 expressed a preference than did not.
- D Fewer people had a preference than those who did not.
- E More than 20% of people did not know which they preferred.

13

My monthly electricity bill is calculated as a standing charge plus an amount per unit used. At the beginning of one month my electricity company decided to change the tariff by reducing the standing charge and increasing the cost per unit. This was intended to help customers who use less electricity.

The table below shows my consumption and monthly charges for the whole year.

| Month | Units used | Charge (£) | Month | Units used | Charge (£) |
|-------|------------|------------|-------|------------|------------|
| Jan | 125 | 42.50 | Jul | 60 | 36.00 |
| Feb | 150 | 45.00 | Aug | 70 | 37.00 |
| Mar | 130 | 43.00 | Sep | 80 | 36.00 |
| Apr | 110 | 41.00 | Oct | 100 | 40.00 |
| May | 95 | 39.50 | Nov | 110 | 42.00 |
| June | 75 | 37.50 | Dec | 130 | 46.00 |

At the beginning of which month was the tariff changed?

- A February
- B April
- C August
- D September
- E December



- 14 A survey has shown the following relationships between parental occupation, type of school and educational success at GCSE level:

| Parental occupation | Average no. of GCSEs at Grade C or above |
|---------------------|--|
| Professional | 7.3 |
| Managerial | 7.2 |
| Routine office work | 6.1 |
| Skilled manual | 3.3 |
| Semi-skilled manual | 2.4 |
| Unskilled manual | 1.6 |

| Type of school | Average no. of GCSEs at Grade C or above |
|-------------------------------|--|
| Independent (i.e. private) | 7.2 |
| Specialist maintained schools | 7.0 |
| Local authority comprehensive | 4.3 |
| Local authority girls | 4.4 |
| Local authority boys | 3.8 |

Which one of the following can be inferred from these tables?

- A All children of managerial-class parents attend independent schools.
- B The majority of children whose parents are office workers attend independent schools.
- C School type is more important than parental occupation in determining educational success.
- D The parental background of children in independent schools is more restricted than that of children in comprehensive schools.
- E Factors other than type of school attended may be important in determining educational success.

- 15 Currently 56% of British school children do not study a foreign language at all at GCSE, and seven university language departments have closed in the past seven years. People with only one language feel disempowered, whereas those who speak other languages are comfortable to travel the world. Once you can speak their languages, some of the mystique of foreigners goes away and you feel less intimidated by them. Good language skills are also important in the international business world.

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

- A British education does not adequately equip people to interact in a global environment.
- B If Britons were more proficient in languages they would enjoy holidays overseas more.
- C The drop in language learning in Britain has put many language teachers out of work.
- D Britons do not see the need to learn other languages, as most foreigners learn English.
- E The poor language skills of British businessmen are holding back many potentially lucrative deals.

- 16 School science lessons were once the place of bangs, flashes, smells, blood and droplets of mercury on the bench. Few, if any, people ever died from these experiences. Now, the activities that once made science fun are rare – banned on health and safety grounds. It has been reported that governments are concerned about the decreasing percentage of students enrolling on science courses at universities. If they do wish to reverse this trend, they need to take steps to curtail the pervasive 'health and safety' culture in which we now live.

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

- A It does not matter if only a few people died as a result of school science lessons.
- B Doing exciting activities in science lessons leads to a higher take-up of science courses at university.
- C There is no reason to ban science practicals that are only minimally dangerous.
- D Health and safety legislation has had only a negative effect on education.
- E Science is only fun if it is dangerous.



17

In the UK, house prices have risen at far greater rates than inflation, fuelled by unprecedented levels of borrowing. Because of these high prices, owning their own home has become unaffordable for many people. Those who are able to 'own' their own home must do so burdened by a huge level of debt. Since the recent financial crisis can be attributed in part to those who were unable to meet the repayments on their debts, governments should attempt to tackle the problem at its root and take action to prevent a continued rise in house prices above the level of inflation.

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

- A The gap between the average house price and average salary has continued to widen over the past five years.
- B House prices have fallen sharply and are no longer increasing at such dramatic rates.
- C Mortgage companies are more reluctant to lend money without substantial deposits.
- D There are few practical interventions that governments could make to lower house prices.
- E Many people are dependent on the value of their property increasing more than the value of their loan in order to pay off their mortgage.

18

There are 420 candidates sitting a public exam in a college. The sports hall can accommodate 210 students; once this has been filled there are other rooms available that are much smaller. The following is a list of the number of single desks that have been set up in each room:

26, 20, 24, 28, 24, 20, 24, 16, 20, 18, 26.

The rooms have sufficient space for all the candidates who are not in the sports hall. The exams officer wants to leave the same number of empty desks in each of these rooms.

What procedure should the exams officer adopt to work out how many students to have in each room?

- A Divide the total number of candidates by the total number of workspaces in each room and take that number away from the capacity of each of the rooms.
- B Add up the total capacity of the rooms, subtract that number from the total number of candidates, divide the result by the total number of rooms and then subtract that number from the capacity of each room.
- C Add up the total capacity of the rooms, subtract the total number of candidates from that figure, divide the result by the total number of rooms and subtract that number from the capacity of each room.
- D Divide the total capacity by the number of students and then take that number away from the capacity of each room.
- E Add up the total capacity of the rooms and divide by the total number of candidates. Multiply the result by the total number of rooms, which gives the number of students to place in each room.

19

Steve and Jen are getting married and would like to have their reception in a marquee. There will be 80 people attending in total and they would like to have the most expensive tables and chairs – eight people will sit at each table. The capacity for a marquee can be worked out using the industry standard of allowing 3 m^2 per person. Price lists from the hire company they will use are given below:

| Size (m) | Size (ft) | Marquee | Carpet | Lighting | Lining | Complete Package |
|----------|-----------|---------|--------|----------|--------|------------------|
| 6 x 3 | 20 x 10 | £150 | £45 | £25 | £80 | £300 |
| 6 x 6 | 20 x 20 | £200 | £60 | £35 | £95 | £390 |
| 6 x 9 | 20 x 30 | £235 | £85 | £55 | £115 | £490 |
| 6 x 12 | 20 x 40 | £280 | £95 | £45 | £120 | £540 |
| 6 x 15 | 20 x 50 | £380 | £125 | £80 | £155 | £740 |
| 6 x 18 | 20 x 60 | £440 | £145 | £90 | £185 | £860 |
| 9 x 3 | 30 x 10 | £175 | £65 | £45 | £95 | £380 |
| 9 x 6 | 30 x 20 | £235 | £85 | £55 | £115 | £490 |
| 9 x 9 | 30 x 30 | £320 | £105 | £65 | £135 | £625 |
| 9 x 12 | 30 x 40 | £380 | £125 | £75 | £155 | £735 |
| 9 x 15 | 30 x 50 | £440 | £145 | £80 | £185 | £850 |
| 9 x 18 | 30 x 60 | £520 | £165 | £90 | £230 | £1,005 |
| 9 x 21 | 30 x 70 | £590 | £185 | £100 | £260 | £1,135 |
| 9 x 24 | 30 x 80 | £680 | £205 | £110 | £280 | £1,275 |
| 9 x 27 | 30 x 90 | £730 | £225 | £120 | £310 | £1,385 |
| 9 x 30 | 30 x 100 | £810 | £245 | £130 | £380 | £1,565 |

| Item | Cost |
|-------------------------|-------|
| Bistro chair | £1.30 |
| Gilt chair | £2.40 |
| Trestle table (seats 6) | £4.00 |
| Round table (seats 8) | £6.00 |
| Patio table (seats 4) | £4.00 |

What is the lowest total cost of a complete marquee package plus tables and chairs for Steve and Jen's reception?

- A £982
- B £1,385
- C £1,529
- D £1,637
- E £1,817



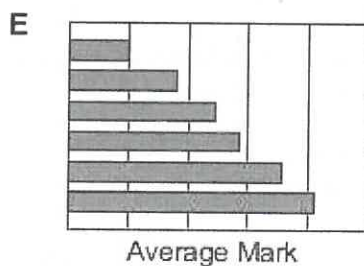
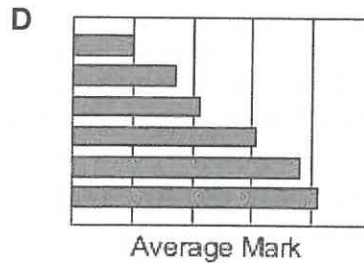
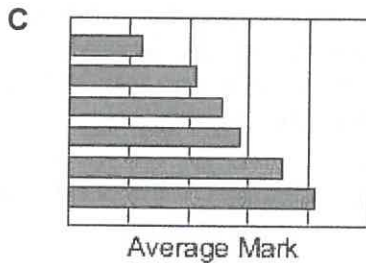
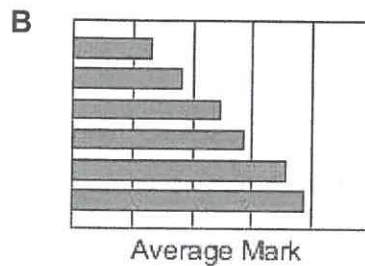
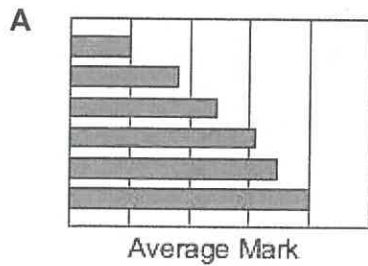
20

The maths sets at Newtown Comprehensive are identified by their teacher's name. Every year the Head of Maths gives the same test to all the maths sets at the end of year 7, calculates the average mark for each set and then produces the results on a bar chart in ascending order. He is asked to present the graphs for the last five years to the Board of Governors. Unfortunately, when they were cut and pasted onto one sheet by the Clerk to the Governors, the years were missed off.

The results for last year were as follows:

| Set | 7BR | 7EV | 7LE | 7MO | 7RA | 7SP |
|----------|-----|-----|-----|-----|-----|-----|
| Av. mark | 57 | 36 | 82 | 20 | 71 | 49 |

Which one of these five graphs shows last year's results?



- 21 We need a fair policy for dealing with drivers whose ability is impaired by drugs, such as cannabis, amphetamines and cocaine. Setting limits for driving under the influence of drugs may be difficult. Tests would be necessary for the levels in the blood of each of these drugs. But, such limits may not reflect the complex interactions between drugs and their effect on driving: a driver may be severely impaired but under the limit for each individual drug. Also, setting a legal limit for the use of a substance that is illegal seems self-contradictory. So to solve the problem of drug-driving there should be a new offence of driving with any level of illegal drug in the body. This would make it much easier to catch and convict drug-drivers – the ultimate deterrent.

Which one of the following identifies the flaw in the above argument?

- A Some countries have legalised the drugs that impair driving ability.
- B Drivers whose ability was not impaired may be convicted.
- C Some legally available drugs may impair driving ability.
- D Drivers may not be aware of the effect of drugs on driving ability.
- E Some illegal drugs can improve driving ability.

- 22 Adding fluoride to the water supply would not, as some claim, improve dental health. If fluoride really did improve dental health, one would expect people living in areas where water is naturally fluoridated to have healthier teeth than people whose water is fluoride free. In fact, research suggests that there is no difference in dental health between the two groups.

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

- A If badgers still lived in this sett, there would be badger droppings at its entrance. Since there are no droppings, there are no badgers here.
- B The only animals in Britain that leave little piles of soil all over the lawn are moles. So those piles of soil on our lawn mean we have moles.
- C The chicken house needs to be secured against foxes. There are definitely foxes living in this area. If any foxes get into the chicken house, they will kill the chickens.
- D The strange noise we heard last night may have been a hedgehog. I cannot think what else it could have been, and I know for a fact that there are hedgehogs around here.
- E If there are grey squirrels in an area, it is unlikely that there are any red squirrels. The animals we just saw were grey squirrels. So there are probably not any red squirrels in this area.



- 23 Inhabitants of towns and roads with odd names often complain that property values are lower and that they face embarrassment when describing where they live. People have a right to decide as a community what is in the best interests of that community and, therefore, local residents should have the right to rename their town or road if they wish.

Which one of the following illustrates the principle used in the above argument?

- A Residents of an area, not central government agencies, should be able to decide where new school buildings are located.
- B Town planning needs to be conducted by outside agencies to avoid neglecting the interests of all groups.
- C Mayors should be elected only on the basis of their abilities, not how long they have lived in an area.
- D People who have only recently moved to an area should not expect to be part of the local community.
- E School pupils should obey the rules set by the headteacher and staff.

24

Nowadays many people in the UK work out their own income tax bills. Everyone has a personal allowance which is the amount of money they can earn each tax year before they start paying tax. Income above the personal allowance is taxed in bands. The UK tax bands and personal allowances for four tax years are shown below. The tax year runs from 6 April to 5 April the following year.

| TAX RATES | | 1999-2000 | 2000-01 | 2001-02 | 2002-03 |
|-----------------------------------|---------------------|------------------|----------------|----------------|----------------|
| Starting Rate | at 10% on the first | 1500 | 1520 | 1880 | 1920 |
| Basic Rate | at 22% on the next | ---- | 26880 | 27520 | 27980 |
| | at 23% on the next | 26500 | ---- | ---- | ---- |
| Higher Rate | at 40% | over 28000 | over 28400 | over 29400 | over 29900 |
| Personal Allowance | | | | | |
| Aged under 65 | | 4335 | 4385 | 4535 | 4615 |
| Aged 65 and over but under 75 | | 5720 | 5790 | 5990 | 6100 |
| Aged 75 and over | | 5980 | 6050 | 6260 | 6370 |
| Married Couple's Allowance | | | | | |
| Elder spouse aged | | | | | |
| Under 65 | | 1970 | ---- | ---- | ---- |
| 65 and over but under 75 | | 5125 | 5185 | 5365 | 5465 |
| 75 and over | | 5195 | 5255 | 5435 | 5535 |

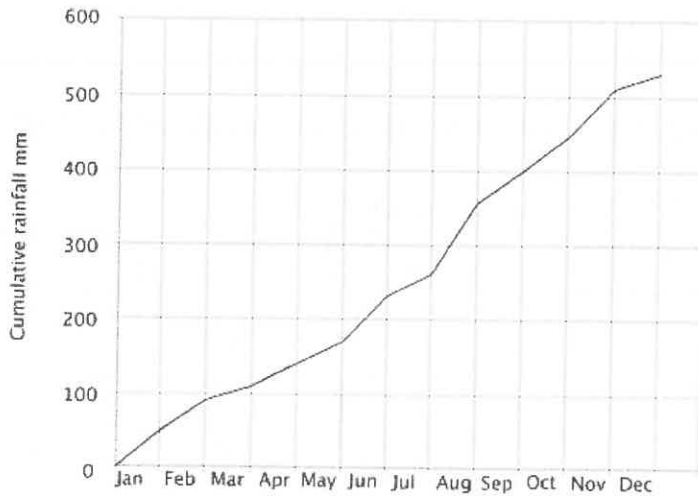
Mary is 52 and her husband is 58. Her only earnings each year are from a summer job. Between 6 April 2000 and 5 April 2001 she earned £5,585.

How much tax did she pay?

- A None
- B £120
- C £125
- D £152
- E £1,200



- 25 The graph below shows the cumulative rainfall for Malvern Wells in the UK for 2010.



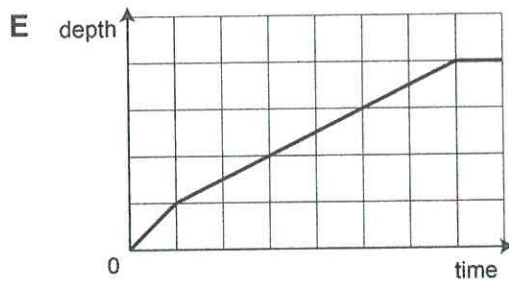
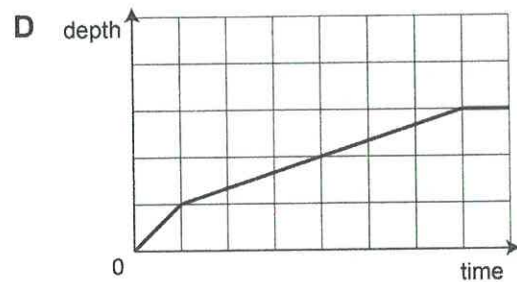
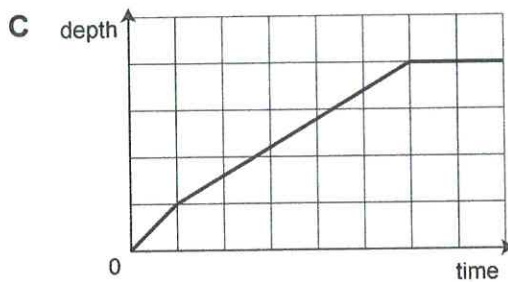
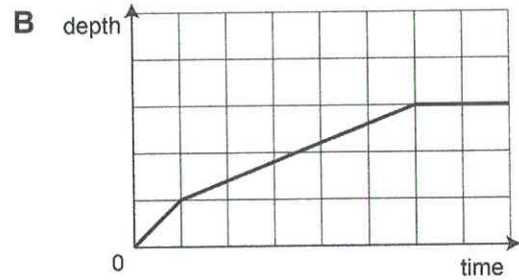
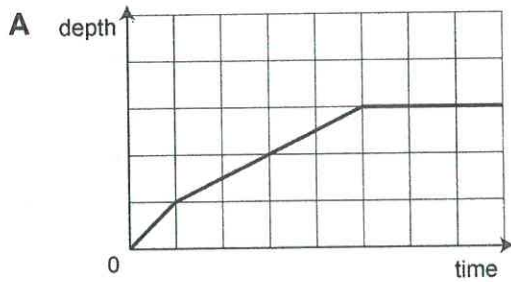
What, approximately, was the average monthly rainfall from the **beginning** of June to the **end** of September?

- A 30 mm/month
- B 40 mm/month
- C 48 mm/month
- D 57 mm/month
- E 100 mm/month

26

Duncan's bath has a flat base and vertical sides. It can be filled completely from the hot tap in 15 minutes or from the cold tap in 10 minutes. Its capacity is 360 litres. When preparing a bath, Duncan's habit is to run both taps together for $1\frac{1}{2}$ minutes, before turning off the cold tap. He turns the hot tap off when the bath is $\frac{3}{4}$ full, then leaves the water for a while to cool down to a suitable temperature before he climbs in.

Which graph would show how the depth of water increases as Duncan prepares his bath?



- 27 Increasing quantities of personal data are recorded and stored on computers: for example, where and when you use your mobile phone or what purchases you make in the supermarket. This poses a potential threat to our privacy. The Data Protection Act forbids the use of this information for a purpose other than that for which it was collected, apart from instances in which serious crime could be prevented or detected. We must not allow this principle to be abandoned because our liberty depends on it. Although at present there is no malign political purpose to which this information is put, we cannot be certain that this will never be the case.

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

- A Our liberty depends upon personal data remaining confidential.
- B We must not allow the data protection principle to be abandoned.
- C We cannot be certain that governments will not misuse personal data.
- D The Data Protection Act does not interfere with the detection of crime.
- E The recording and storing of personal data poses a threat to our privacy.

- 28 An intensely irritating fashion among politicians of all parties is to use the sound bite 'doing the right thing' to justify whatever action they have taken or propose to take. The phrase cleverly implies that if you do not agree with the action you are an immoral person – and no-one wants to be that. Taken to its logical conclusion, all we need are politicians who have some sixth sense that tells them what 'the right thing' is, and, hey presto, we can trust them to act on our behalf without any need for accountability. This is nothing short of dangerous brainwashing.

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

- A Sound bites are used to avoid proper explanations for decisions.
- B Politicians always think they know what is the right thing to do.
- C Politicians should give proper rationales for their decisions, not glib sound bites.
- D Irritating sound bites have the effect of alienating the general public.
- E Politicians prefer to avoid giving a proper rationale for their decisions.

29

Thankfully, logicians did not devise the British Constitution. It has evolved through the work of ordinary people, who have adapted the Government of the country to meet the needs of their age. They have always preserved sufficient flexibility to permit such adaptation. And we have avoided a lot of problems because we have never been guided in anything we have done by logic. If you study the period of history from the Civil War, in the middle of the 17th century, to the accession of George I in 1714, you will see the benefits of not making the Constitution too rigid by writing it down. It proves how much there is to be said for ignoring logic and following common sense.

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

- A As the British Constitution was devised by logicians, it cannot be adapted to meet contemporary needs.
- B The need to write down the British Constitution became inevitable over time.
- C Britain was fortunate that its Constitution evolved flexibly as a result of the work of ordinary people.
- D It is not possible to follow both logic and common sense because they will always produce different results.
- E It is always right to ignore logic and follow common sense because such a course of action produces the best results.



- 30 Towards the end of a sports season in which all teams in the league play each other four times, the league positions are as follows:

| | Played | Won | Drawn | Lost | Pts |
|---------------|--------|-----|-------|------|-----|
| East Rovers | 16 | 8 | 7 | 1 | 31 |
| West Athletic | 14 | 7 | 3 | 4 | 24 |
| North Rangers | 17 | 6 | 4 | 7 | 22 |
| South United | 17 | 4 | 10 | 3 | 22 |
| Top Town | 13 | 3 | 8 | 2 | 17 |
| Bottom Albion | 15 | 3 | 6 | 6 | 15 |

Three points are awarded for a win, 1 point per draw and 0 for a loss. At the end of the season, if two teams have the same number of points, the league will be decided by the highest number of games won.

How many of the competing teams could win the league when all the games have been completed?

- A 1
- B 2
- C 3
- D 4
- E 5

31

I am planning to take up a new hobby. There are a number of classes available locally, summarised in the table below:

[I do not want to have to leave home before 09:15 and I must be back by 16:15. I will choose the activity that is the cheapest per hour.]

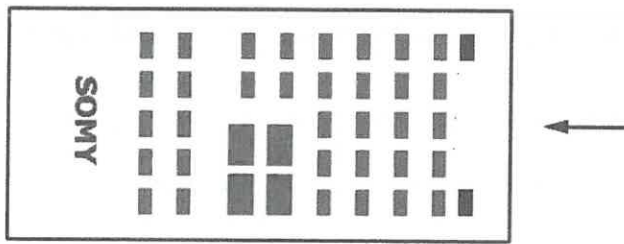
| Activity | Travel time (one way) | Start time | Finish time | Class price (\$) |
|----------|-----------------------|------------|-------------|------------------|
| Painting | 20 mins | 10:00 | 12:00 | 30 |
| | 20 mins | 10:30 | 13:00 | 40 |
| Dancing | 50 mins | 10:00 | 12:00 | 24 |
| | 30 mins | 9:30 | 13:00 | 45 |
| | 10 mins | 13:00 | 17:00 | 45 |
| Pottery | 60 mins | 10:00 | 11:30 | 35 |
| | 60 mins | 11:00 | 13:00 | 40 |
| Writing | 10 mins | 10:00 | 12:30 | 35 |
| | 30 mins | 14:00 | 15:30 | 24 |

What will be the price of the class I will take?

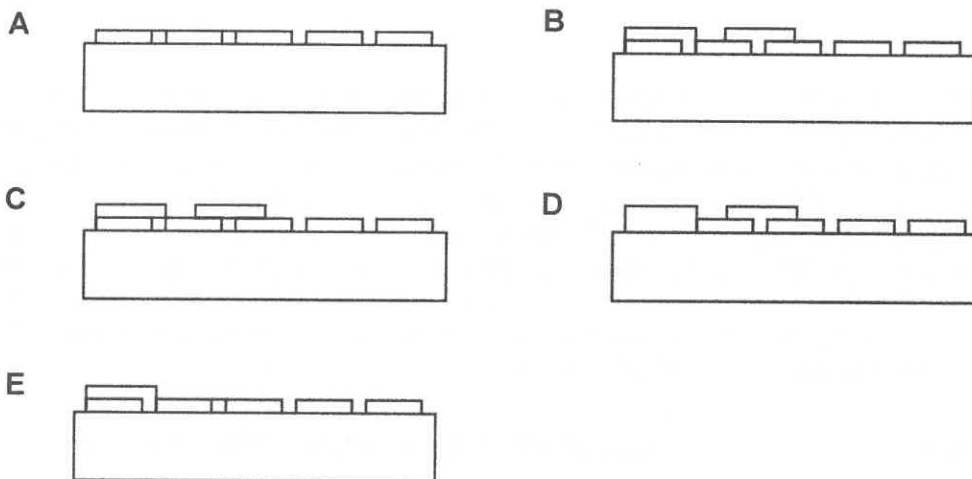
- A \$24
- B \$30
- C \$35
- D \$40
- E \$45



- 32 My TV remote control is shown below. All the buttons stick out from the body of the remote control.



When viewed from the direction of the arrow, which one of the diagrams below is **not** a possible view of the remote control?



- 33 Most city centres in the UK are now covered by sophisticated CCTV cameras which can record crimes being committed. Many towns and cities report a reduction in crime where cameras are installed: for example, Airdrie reported a 75% fall in crime and Kings Lynn reported a massive 90% reduction. Thus, they are a real success in controlling 'opportunistic' crime.

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

- A Not all cameras are manned and recording.
- B The cameras tend to be sited only in the centres of towns and cities.
- C CCTV usually forms part of 'anti-crime' packages which include an extra police presence.
- D The cameras are an overreaction to the actions of a small minority.
- E The camera images are often too poor quality to be of use in court convictions.

- 34** All British students should study a foreign language at school. We live in a rapidly expanding global market, where knowledge of a foreign language is essential if you want to work at the highest level. If all students studied a foreign language at school, there would be more British people at the heart of global business.

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

- A** The writer treats a necessary condition as a sufficient condition.
- B** The writer treats a sufficient condition as a necessary condition.
- C** The writer draws a general conclusion from one example.
- D** The writer assumes that there is a causal connection on the basis of a correlation.
- E** The writer assumes that because this has happened in the past, it will happen again.

- 35** Paying bonuses of at least £1 million to high-flying stockbrokers and employees of banks cannot be justified. Such massive bonuses encourage these high-flyers to take unacceptable risks with shareholders' assets in the pursuit of profits. Furthermore, the system discourages our brightest young talent from taking jobs in industry, where the rewards are much more modest but where there is a great need for such talent. One of the reasons why City firms (i.e. London-based financial organisations) can pay such bonuses is that they charge enormous fees for assisting with takeover bids between companies. City firms often encourage companies to engage in such takeover battles but the costs for these frequently unsuccessful battles fall on to the companies and thus on to the consumer.

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

- A** The consumer ultimately has to pay for the City employees' very high bonuses.
- B** The payment of very large bonuses to City employees is unacceptable.
- C** Very large bonuses encourage City firms to take unjustifiable risks.
- D** City firms should not encourage companies to engage in takeover battles.
- E** If City employees were not paid very high bonuses, they would work in industry.



36 A film star has agreed to sign autographs for £1 each at a charity function, all day from 9 am to 6 pm.

He claims to sign his name consistently ten times every minute, but insists on having a ten-minute break after each full hour of signing.

How much do the organisers hope that the autographs will raise?

- A** £4,500
- B** £4,600
- C** £4,700
- D** £4,800
- E** £5,400

37

A gardener has to apply mulch to two plots of land, measuring 10 metres by 5 metres and 15 metres by 20 metres. The mulch has to be applied to a depth of 50 mm for the first plot and 100 mm for the second plot. The mulch weighs 0.65 tonnes per cubic metre.

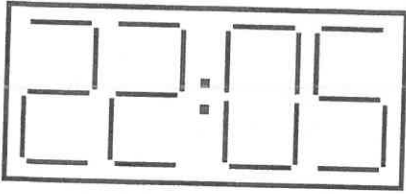
| Quantity in cubic metres | AREA COVERAGE OF MULCH IN SQUARE METRES | | | | | |
|--------------------------|---|-------------|-------------|--------------|--------------|--------------|
| | 25 mm depth | 50 mm depth | 75 mm depth | 100 mm depth | 125 mm depth | 150 mm depth |
| 1 | 40 | 20 | 13 | 10 | 8 | 7 |
| 2 | 80 | 40 | 26 | 20 | 16 | 14 |
| 3 | 120 | 60 | 39 | 30 | 24 | 21 |
| 4 | 160 | 80 | 52 | 40 | 32 | 28 |
| 5 | 200 | 100 | 65 | 50 | 40 | 35 |
| 6 | 240 | 120 | 78 | 60 | 48 | 42 |
| 7 | 280 | 140 | 91 | 70 | 56 | 49 |
| 8 | 320 | 160 | 104 | 80 | 64 | 56 |
| 9 | 360 | 180 | 117 | 90 | 72 | 63 |
| 10 | 400 | 200 | 130 | 100 | 80 | 70 |

How many one-tonne bags are necessary to complete the mulching of the two plots?

- A 2
- B 13
- C 20
- D 22
- E 33



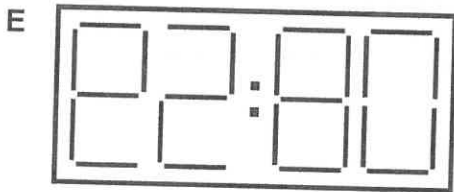
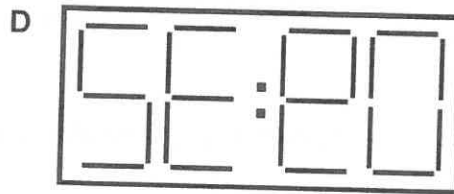
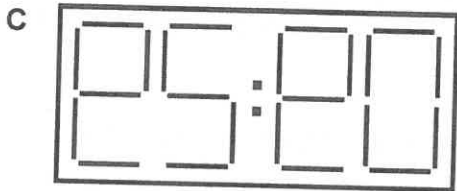
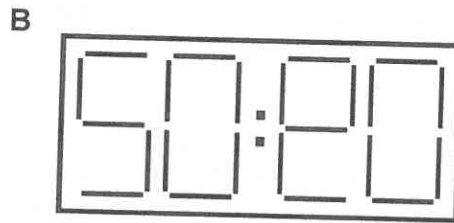
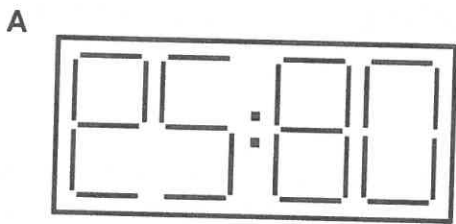
- 38 I stayed in a hotel last night. My room was at the front of the building. At one point I looked out of the window and saw:



on an illuminated digital clock on the other side of the road. I took the opportunity to reset my watch, which had stopped sometime earlier.

This morning, when I looked out, I realised that what I could see across the road was a reflection in the building opposite of a clock outside the hotel. According to my watch (which I now knew I had reset incorrectly last night) the time was supposedly nine minutes past ten.

What did I see across the road when I looked out this morning?



39

Critics of homeopathic medicine argue that much of the apparent success of its remedies is due to the placebo effect (a placebo is a substance containing no medication). The remedies work because the patients believe they will work. In rebuttal, homeopaths often refer to a study involving a herd of pedigree Friesian cows. The herd was divided into two groups of 41 cows each. One group, the treatment group, was given a homeopathic remedy against mastitis, while the control group was given a placebo. The findings showed that 10 of the cows in the control group developed mastitis, while only one in the treatment group developed it.

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

- A The beneficial effects of homeopathy are entirely due to the placebo effect.
- B The beneficial effects of homeopathy are apparent and not genuine.
- C The beneficial effects of homeopathy in cows cannot be due to the placebo effect.
- D The beneficial effects of homeopathy are experienced only by animals.
- E The beneficial effects of homeopathy are subject to a great deal of ill-informed criticism.

40

Car owners must have insurance in case they have an accident. Similarly, home owners have insurance in case anyone on their property is injured and claims compensation. However, insurance is not required for dog owners. Any injury caused by a dog is compensated by taking the owner to court, which is not easy. A law must be passed to make insurance compulsory for every dog owner. Any injuries would be paid for by the insurance companies, not long-suffering taxpayers.

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

- A Dog owners would find it hard to pay for insurance.
- B All insurance companies would want to participate in the scheme.
- C All dog owners would obey the law.
- D Most injuries are caused by illegal breeds of dog.
- E Injured parties can afford to take dog owners to court.



- 41 The main reason private schools thrive in Britain is that they are extremely good at getting their students into elite universities. In the UK only 7% of students attend private schools but they account for 40% of students at Oxford and Cambridge. As entry to the top universities is dependent on examination results (particularly A-level results), private school students must be achieving higher grades than those in the state sector. Higher grades are the result of good teaching, so the teaching in private schools must be better than the teaching in state schools.

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

- A A-levels are not the only exams that can be used for admission to Oxford or Cambridge.
- B Only people from wealthy families can go to private schools.
- C More than 40% of students at Oxford and Cambridge attended state schools.
- D A higher proportion of private school candidates take A-levels than those from the state sector.
- E Many private schools now accept scholarship students from poorer backgrounds.

- 42 An examination contains five questions. Candidates are instructed to answer three questions only, including at least one of the first two and no more than one of the last two.

How many different combinations of questions are available for a candidate to choose from?

- A 4
- B 6
- C 7
- D 8
- E 10

43

Hester is going for a job interview. She needs to travel by railway between Birmingham and Derby, but she needs to stop off in Tamworth for an hour on the way out to see her former teacher for some coaching. When at Derby, she needs an hour and a half to go to the prospective employer to take an aptitude test. She can fix her appointments for any time in the day. Naturally, she wants to make the journey in the most efficient way so that it takes the least possible time.

This is the railway timetable:

Out:

| Station | | | | | | | | |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Birmingham | 09:00 | 10:00 | 11:00 | 12:00 | 13:00 | 13:30 | 14:30 | 15:30 |
| Tamworth | 09:30 | 10:28 | 11:30 | 12:45 | - | 13:45 | 14:45 | 15:50 |
| Derby | 09:50 | 10:40 | 11:50 | 13:05 | 13:35 | 14:00 | 15:05 | 16:00 |

Return:

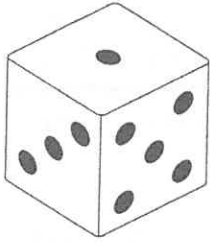
| Station | | | | | | | | |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Derby | 10:40 | 11:10 | 12:15 | 13:10 | 14:00 | 15:20 | 16:10 | 17:00 |
| Tamworth | 11:05 | - | 12:35 | 13:45 | - | 15:45 | 16:35 | - |
| Birmingham | 11:50 | 11:55 | 13:10 | 14:15 | 15:00 | 16:12 | 16:55 | 18:15 |

Which would be the best trains to catch from Birmingham and Derby?

- A Leaving Birmingham 09:00; leaving Derby 12:15
- B Leaving Birmingham 10:00; leaving Derby 14:00
- C Leaving Birmingham 11:00; leaving Derby 15:20
- D Leaving Birmingham 12:00; leaving Derby 16:10
- E Leaving Birmingham 13:30; leaving Derby 17:00

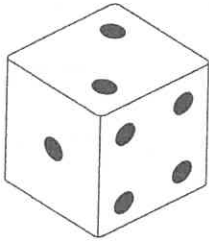


- 44 The die shown below is a conventional die, i.e. the total number of spots on any two opposite faces is always seven.

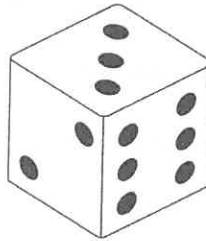


Which one of the following could **not** be the appearance of the die shown above after a subsequent throw?

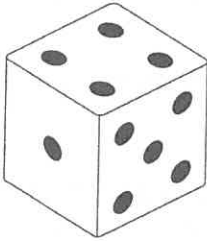
A



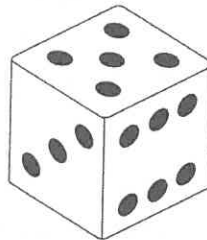
B



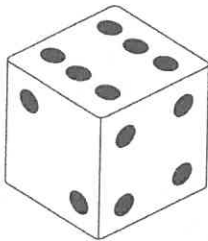
C



D



E



- 45 Suppose a book begins with the sentence 'Dark clouds gathered'. Does this mean that it is going to rain, or there is going to be a war, or something else no-one had thought of? The traditional answer was: ask the author, or try to work out what the author intended it to mean. But this would not give you the answer, surprising though that may seem. Why not? Because what the words mean is what they mean to you, the reader, and to anyone else who speaks the language to which they belong. Authors can't change what words mean by intending something different, any more than you can. What they say they mean is no more correct than anyone else's interpretation.

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

- A No-one can give an answer to the question: what does this sentence mean?
- B The traditional way to discover meaning was to find out what the author intended.
- C Knowing what the author intended doesn't tell you what a sentence means.
- D Everyone understands something different when they read a sentence in a book.
- E The sentence 'Dark clouds gathered' can have more than one meaning.

- 46 If you want to get a good job then you need to write a good application letter. You didn't get the last job that you applied for, so you can't have written a good application letter.

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

- A Recording the best time in your heat would guarantee you a place in the final race. You don't have a place in the final, so you can't have recorded the best time in your heat.
- B To join the army you need to pass a physical examination. Since your health is very poor, you won't be able to join the army.
- C You can't be part of the yachting team without a certificate to show that you can swim. Since you were not allowed on the yachting team, you must not have a certificate to show that you can swim.
- D The manager will promote only people who have worked well in the previous year. Since you've been working hard you should expect a promotion.
- E If you want to get to the meeting on time then you need to leave within the next 20 minutes. Since you are nearly ready to leave, you should get to the meeting on time.

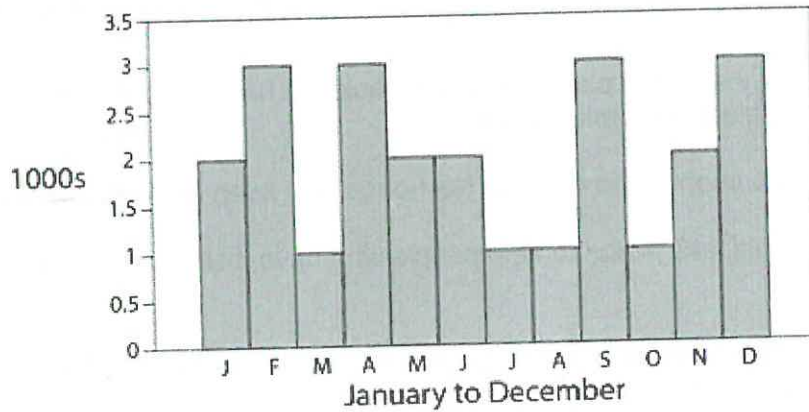


- 47 The credit crisis has significantly damaged pensions and pensioners. Millions of people coming up to retirement now, without a final salary pension, are at risk of poverty. It is previous government policy decisions, not just the credit crisis, that are to blame. We have had a pensions crisis building up for the last few years. One should always take responsibility for one's mistakes. Therefore, the Government must act!

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

- A If I had not tried to carry so many plates at once I would not have dropped some when I slipped, so I should replace the broken ones.
- B My dog always attacks people who come to the house, so I keep her in the back garden.
- C The Government should take action to help people who have lost possessions in the recent floods.
- D We should all feel responsible for our own future security so it is right that the Government provides a safety net.
- E While there are some situations for which we cannot plan, if we fail to insure ourselves we only have ourselves to blame.

- 48 Deliveries of containers for a fast-food takeaway are made only four times per year, at the beginning of January, April, July and October. Last year the takeaway over-ordered containers and currently has 2,000 left. The number of containers used per month varies, but is no more than 3,000 and no fewer than 1,000. The maximum number that can be delivered at one time is 6,000. The usage for last year is illustrated below.



Assuming the same usage this year, how many containers need to be delivered each quarter (in January, April, July and October) in order for over-ordering to be minimised?

- A 5,000 in January, 6,000 in April, 5,000 in July, 6,000 in October
- B 6,000 in January, 7,000 in April, 5,000 in July, 6,000 in October
- C 4,000 in January, 7,000 in April, 5,000 in July, 6,000 in October
- D 6,000 in January, 6,000 in April, 6,000 in July, 6,000 in October
- E 4,000 in January, 6,000 in April, 6,000 in July, 6,000 in October



49

The table below shows the available denominations of British stamps in 2009:

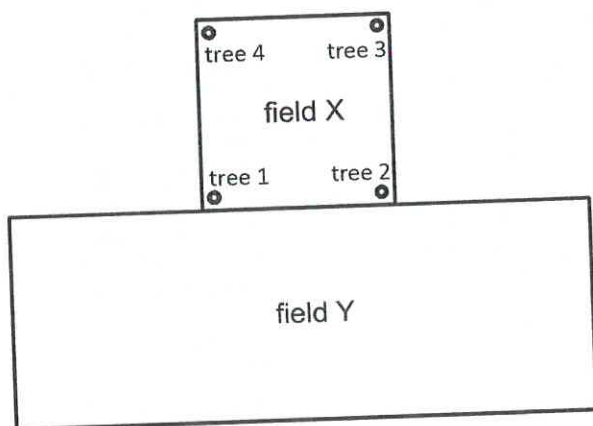
| Stamp | Value | Usual Purpose |
|-----------|-------|-------------------------------------|
| 1p | 1p | Make up value |
| 2p | 2p | Make up value |
| 5p | 5p | Make up value |
| 9p | 9p | Make up value |
| 10p | 10p | Make up value |
| 17p | 17p | Make up value |
| 20p | 20p | Make up value |
| 22p | 22p | Make up value |
| 2nd | 30p | 2nd Class (UK) standard letter rate |
| 1st | 39p | 1st Class (UK) standard letter rate |
| Large 2nd | 47p | 2nd Class (UK) standard letter rate |
| 50p | 50p | Make up value |
| 54p | 54p | Worldwide basic (20 g) surface rate |
| 56p | 56p | European basic (20 g) |
| Large 1st | 61p | 1st Class (UK) standard letter rate |
| Postcard | 62p | World postcard rate |
| 62p | 62p | Airmail |

What is the lowest amount above 55p which must be made up with at least three stamps?

- A 58p
- B 65p
- C 68p
- D 75p
- E 79p

50

Four trees stand at the corners of square field X. They are photographed from field Y, from every possible direction, close up and from a distance, but never so that one tree stands in front of another.



In how many different orders, left to right, can the trees appear in the photographs?

- A 1
- B 2
- C 3
- D 4
- E 5



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