Thinking Skills Assessment Oxford 4502/11

Wednesday 5 November 2014   **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.

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

This paper consists of 33 printed pages and 3 blank pages.

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1   In the past 15 years the government has poured millions of pounds into promoting sport to try to increase adult participation. The results show no lasting effect. A survey showed that unless children 'catch the sport habit' between the ages of seven and fourteen years they are unlikely to participate in sport as an adult, and that the sports they adopt as children are likely to be the sports they play as adults. Schools need and should be given money to give children an interest in sport. Spending money trying to persuade adults to take up sport is like locking the stable door after the horse has bolted.

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

A   If people do not gain an interest in sport when they are young they never will.

B   The government has wasted millions of pounds promoting sport to adults.

C   The government should give funds to schools to help children catch the sport habit.

D   Schools need more time in the curriculum to promote sport.

E   The sports children adopt will determine what they play as adults.

2   Two neighbours work for the same company and share the journey to work, driving alternately in strict rotation. They work Monday to Friday each week and every other Saturday. (They always work the same Saturdays as each other.)

What is the **maximum** number of days either of them has to drive in a calendar month?

A   11

B   12

C   13

D   14

E   15

3   Sales of printed books are steadily declining, with sales dropping to a seven-year low in 2011. Independent bookshops are closing all over the country and chain bookstores are likely to be hit next. Sales of e-books, meanwhile, are booming, with many predicting that 50 per cent of all books sold within 10 years will be digital downloads. Anecdotal evidence suggests that people enjoy the convenience of digital media. E-books have triumphed: they have led readers away from traditional forms of print to a digital world.

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

   A   It bases its conclusion on predictions of future sales rather than hard evidence.

   B   It ignores the advantages that e-books have over printed books.

   C   It assumes that e-books have not attracted new readers.

   D   By focussing on the closure of bookshops it ignores the creation of new electronic markets.

   E   It cites anecdotal evidence.

4   When Arnold Schwarzenegger was the Governor of California, he looked for ways to make savings in an effort to balance the California budget. He was particularly concerned about the high cost of school text books, which he considered to be outdated. Schwarzenegger, who portrayed a time-travelling robot killer in the *Terminator* films in which a computer network takes over the world, looked to information technology to solve the problem of the high cost of text books. He proposed that as an alternative to books, students could be given hand-held devices that store up-to-date books electronically and allow them access to online work for maths and science. Since students are experienced with computers and will readily accept the new technology, this is not just Hollywood sci-fi but common sense.

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

   A   The Governor based his decisions on his film experiences.

   B   The proposed use of information technology will save money.

   C   Students will like these devices better because they play computer games.

   D   The Governor considered text books to be outdated.

   E   Students cannot currently access online work for maths and science.

5 Recent news stories have mistakenly implied that animals can understand mathematics better than humans. Participants in a study were asked to state a choice of one of three doors, behind one of which there was a prize. Then the researcher opened one of the other two doors, revealing that there was no prize behind it. Asked if they would like to change their choice, most chose not to change. Switching to the remaining closed door would have increased their chance of winning. Even after playing the game many times, which allowed them to observe that they would win more often if they switched, most did not do so. When pigeons played a similar game, after a few attempts they switched every time. So the pigeons learnt from experience, whereas the people overanalysed and became confused.

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

A Birds are better than human beings at learning from experience.

B Most people did not notice that they won more often if they switched.

C The people were no better than the pigeons at calculating probability.

D Most people thought that the probability of winning remained the same.

E Learning from experience is not a mathematical process.

6 Central Avenue is a long straight road, several kilometres long. Both my home and my office are on Central Avenue, and the diagram below shows their positions, together with two sets of traffic lights that lie in between.
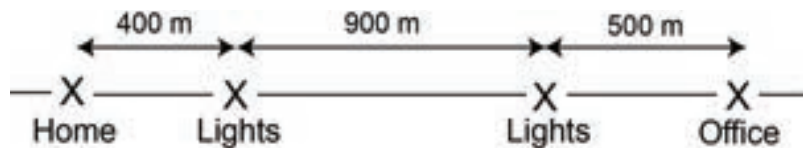
Both sets of lights turn to green for Central Avenue traffic simultaneously, showing green for exactly two minutes, turning green again exactly two minutes later.

I cycle to work every morning at a steady speed of 5 metres per second (except, of course, whilst waiting at traffic lights).

What is the **longest** journey time I can expect the journey to work to take?

A 6 minutes

B 7 minutes

C 8 minutes

D 9 minutes

E 10 minutes

[Turn Over

7 The United States Postal Service has an online guide to help people using their postal service. This is an extract:

First Class Mail

First class mail must be used for handwritten or personal correspondence.

First Class Mail Rates – single piece rates

First 30 grams Letter size mail	$0.44
Each additional 30 grams or part thereof	$0.17 up to 360 grams
First 30 grams Parcel	$1.22
Each additional 30 grams or part thereof	$0.17
Standard Postcard	$0.28

Letters: 30 cm long, 16 cm wide, 1 cm thick, maximum weight 360 grams. (Any item larger than this must be sent as a parcel).

Parcels: Dimensions cannot exceed 1250 cm.

I want to send two items through the post using first class mail. One is 50 cm long, 25 cm wide, 10 cm thick and weighs 300 grams. The other is 20 cm long, 12 cm wide, 0.20 cm thick and weighs 110 grams.

How much will it cost me to send the items?

A $2.92

B $3.53

C $3.70

D $4.04

E $4.48

8   Below is Thomas Leslie Fuller's brass paperweight, which shows his initials.
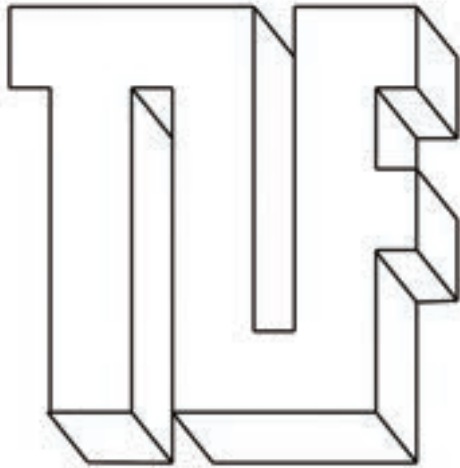
Which one of the following is **not** a side view of Thomas' paperweight when it is placed flat on a table (either side up)?

A

B

C

D

E

[Turn Over

9   Action should be taken to prevent the use of children as low-cost labour in poor Asian countries in industries such as electronics, garment, shoe and toy manufacture. Nothing short of a ban on child labour is acceptable. Child labour is an attractive proposition for employers: children have quick fingers, good eyesight and are often more productive than adults and do not have to be paid very much. And there's a ready supply, thanks to the number of children dropping out of education because their parents cannot afford to educate them. If children have to work they are denied their childhood and education.

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

   A   Laws governing the minimum age for employment do not exist everywhere.

   B   It is well known that children work more consistently than adults.

   C   Without the children's wages, the family could not afford to educate them anyway.

   D   Without cheap child labour, the cost of manufactured goods would rise.

   E   International agencies have long been pressing for free education for all.

10   During the Industrial Revolution, savvy entrepreneurs realised canals were a cost-effective, efficient way to move goods around the country. Gradually, however, canal carriage was replaced with other modes of transportation that were faster and cheaper. In twenty-first century Britain, most businesses choose to use road haulage as a means of transportation. With the rise in fuel costs and introduction of 'low emission' zones, road haulage is now becoming less practical and economical. As the roads grind to a halt, it will not be long before the canals once again become the backbone of goods transportation.

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

   A   Canal transport is unlikely to be as fast as road haulage.

   B   Canals are not as convenient as the road network.

   C   It may be possible to make road haulage cheaper.

   D   It may be very expensive to re-open the disused canals.

   E   Canals may not be the only alternative to road haulage.

11 The presence of an ethical symbol, such as 'right' or 'wrong', in a proposition adds nothing to its factual content. If I say to someone, 'You acted wrongly in stealing that money', I am not stating anything more than if I had simply said, 'You stole that money'. In adding that this action is wrong I am not making any further statement about it. I am simply evincing moral disapproval. It is as if I had said, 'You stole that money' in a tone of horror, or written it with exclamation marks after it. The tone, or exclamation mark, adds nothing to the literal meaning of the sentence. It merely serves to show that the expression is attended by certain feelings in the speaker.

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

A   Adding to a statement the words 'right' or 'wrong' does not alter its factual content.

B   'You acted wrongly in stealing that money' just means 'you stole that money'.

C   When somebody states that something is wrong, they are making a statement of fact.

D   How people feel about an action is not relevant to the issue of whether it is right or wrong.

E   Saying that something is right or wrong is just a way of showing disapproval.

12 David is planning a holiday for himself and his wife. He has a budget of £2,000 but wishes to retain about £600 for spending money. Below is a table showing different holiday possibilities.

	Return flight	**Ferry and train**	**Car hire and fuel**	**Hotel accommodation**
Moscow	£300 per person	£250 per person	N/A	£120 per night for 2 only
Cyprus	£195 per person	N/A	N/A	£42.50 per person per night
Barcelona	£215 per person	£210 per person	N/A	£370 per week per person
Paris	£80 per person	£78 per person	N/A	£180 per night per room for 2
Scotland	N/A	N/A	£40 per day	£80 per night for 2 only
Rome	£110 per person	£220 per person	N/A	£120 per night for 2 only

Which one of the following holiday possibilities leaves him with as near to £600 as possible?

A   Ten nights in Moscow, travelling by ferry and train.

B   Twelve nights in Cyprus.

C   Twelve days and nights in Scotland.

D   Twelve nights in Rome travelling by plane.

E   Seven nights in Paris travelling by plane.

[Turn Over

13   The table below shows the energy values for the main foods used by volunteer wardens at a wild bird reserve to prepare a variety of feed mixes.

Food	Energy per 100 g calories)
mealworms	150
peanuts	560
apples	350
oats	370
niger seed	480
cheese	400
sunflower seeds	500
raisins	300
sunflower hearts	600
suet	800

A trainee volunteer has been asked to prepare a sample of a special mix to provide exactly 5,000 calories. He has weighed out the first four ingredients but cannot read the required mass of the final ingredient because of an ink blot. This is what has been weighed out so far:

mealworms 150 g, apple 150 g, raisins 250 g, suet 125 g

What mass of sunflower seeds must be used to successfully complete the task?

A   500 g

B   520 g

C   540 g

D   560 g

E   680 g

14   Sue takes her dog Freya to the park. She throws a stick for Freya to fetch. Freya runs to collect the stick and bring it back to Sue. While Freya is collecting the stick, Sue walks slowly towards Freya.

Which one of the following graphs could correctly show the distance between Sue and Freya?

A

B

C

D

E
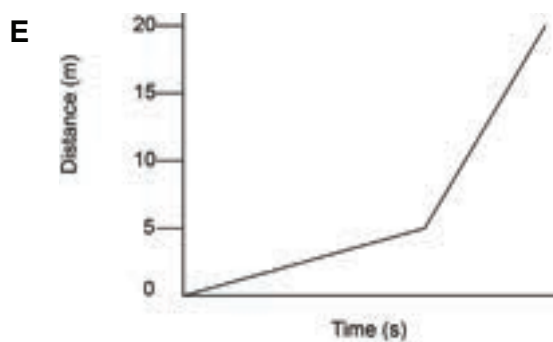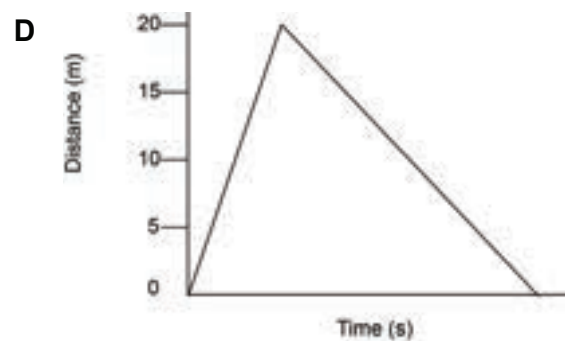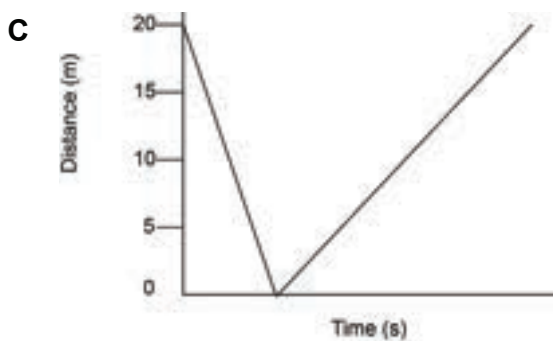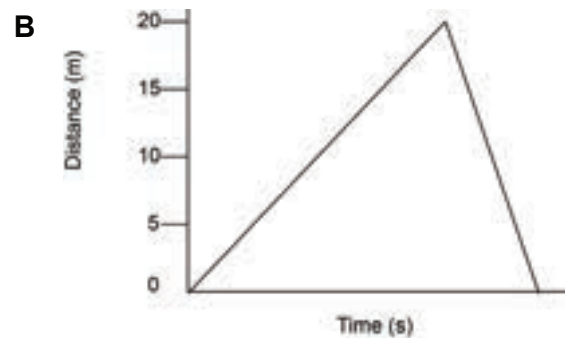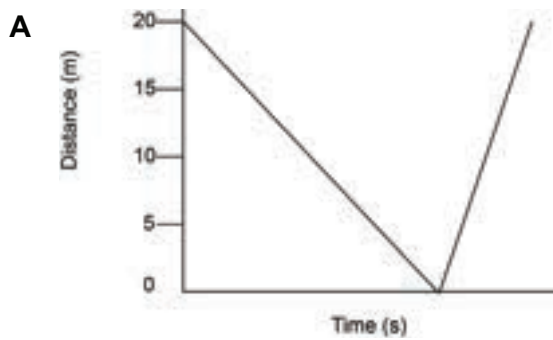
15   The funding of the BBC through a universal licensing system is considered by many to be outdated and unfair. There seem to be only a limited number of options for the continued funding of this public broadcasting network. Firstly, the licence fee system could continue as at present. Secondly, the BBC could raise its own revenue as a commercial company through advertising and sponsorship. Finally, the BBC could be paid for like other parts of the public sector, through general taxation.

Funding of the BBC through taxation may raise questions about the BBC's independence from government. This independence might also be put at risk if the BBC had to operate as a commercial company. It might be unduly influenced by its advertising and sponsorship customers unless serious safeguards are put in place.

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

   A   There is no alternative to the licence fee.

   B   The independence of the BBC is inevitably at risk.

   C   Although not perfect, the licence fee is the best option.

   D   General taxation will not be as efficient in raising revenue as the licence fee.

   E   Commercial advertising on the BBC will damage the revenue prospects of the commercial broadcasters.

16   A palaeontologist has argued that T.rex could not have been a predator. He says this because few predators have small eyes (needed to see prey) small arms (needed to hold prey), and huge legs (meaning slow speed), all of which are true of T.rex and that there is no evidence for predation such as bones with T.rex teeth embedded in them. Instead, he argues, it must have been a scavenger as its skull shows it had a good sense of smell and its legs were suited for walking long distances. Other scientists disagree, pointing out that many predators do not use forelimbs in hunting and that the speed of any dinosaur is very hard to assess.

Which one of the following is an underlying assumption of the palaeontologist's argument?

   A   Predators do not leave their teeth embedded in the bones of their victims.

   B   Generalisations cannot be made between modern and prehistoric periods.

   C   T.rex could not have been both a scavenger and a predator.

   D   All predators must be able to move quickly.

   E   There are not enough fossilised remains yet for scientists to make a judgement.

17 There was a 17 per cent decline in public library use in the UK between 1993 and 2003 according to a report by CABE (The Commission for Architecture and the Built Environment). They suggest this is not due to a lack of public interest in reading books. Rather it is the authoritarian style and image of libraries with their rules about silence and fines for late returns of books. Those few libraries that have moved away from this image such as the one in Bournemouth, which provide cafes and 'chill-out' zones, have seen a 40 per cent increase in library use. Therefore it is clear that the future of the function of the UK library service will be more assured if all libraries follow this lead.

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

    A The decline in public library use has not occurred in other European countries.

    B The main users of public libraries are school children looking for reference books.

    C Bookshops have experienced an increase in sales since 1993.

    D The use of computers in libraries has increased over the same period.

    E Few people who use new-style libraries use them to borrow books.

18 A main road crosses a side road and the junction is controlled by a set of traffic lights. The normal sequence is for the lights to be green for 25 seconds on the main road followed by 15 seconds of green for the side road. There is also a pedestrian phase in the lights when all the road lights are red. If a pedestrian presses a button to cross any of the roads then, after the side road lights have been green, the pedestrian lights turn green for 10 seconds. Following a pedestrian phase, the main road green period is increased to 35 seconds to clear the build-up. Whenever any of the lights change there is a two-second period when all lights are red. The time on amber is included in the green times given above.

What is the longest time traffic on the side road will have to wait for their lights to go green?

    A 19 seconds

    B 29 seconds

    C 45 seconds

    D 51 seconds

    E 66 seconds

[Turn Over

19 Elsie has six grandchildren. Their birthdays are as follows:

Ryan	19th February
Rebecca	3rd May
Richard	30th May
Ralph	7th September
Ruth	17th November
Robert	16th December

Remarkably, in non-leap years the boys' birthdays are on the 50th, 150th, 250th and 350th days of the year, whilst the girls' birthdays are on the 123rd and 321st days, and all six are on different days of the week.

Which other grandchild's birthday is on the same day of the week as Ryan's in a leap year?

A Ralph

B Rebecca

C Richard

D Robert

E Ruth

20 Whenever my friend Alistair writes to me he does so entirely in code. He always uses symbols for letters but changes the code each time, so any particular symbol does not necessarily stand for the same letter of the alphabet every time.

I always start to crack the code by looking at how he has written his name at the end of his letter. For instance, last time he was:

In my last letter to him I asked him when he intends to visit me next. Today I have received a reply consisting of just one word as follows:

When can I assume that he intends to appear?

A   TOMORROW

B   THURSDAY

C   SATURDAY

D   NOVEMBER

E   SOMETIME

21 The Government are transferring the cost of a university education from the state to the student. This is described as a reform which will put universities' finance on a sustainable footing with more freedom and less bureaucracy. In addition it will lead to a greater choice for students with a focus on high quality teaching. The rise in tuition fees to £9,000 per year, making the cost of a three–year degree £27,000, should not be considered as too high. After all, the cost of a Mercedes Benz B-Class Sports Model is about the same price on the road as a three-year degree. This should put the rise in tuition fees into perspective and we can conclude that the tuition fees are very reasonable.

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

A   A university education is worth more than a car.

B   The cost of a car is not relevant.

C   Transferring the cost from the state to the student is not fair.

D   There is no evidence that students will have greater choice.

E   Universities will have to raise the fees in future.

22 You probably don't have to be a cat-lover to enjoy *The Great Race* – an excellent short film about a Yorkshireman who goes running with (and against) his one-eyed cat. Now he wants to make it a full-length film, but this is a mistake. Eight minutes of feline fun is about as much as any audience can take. Cats are like babies in this respect: endlessly fascinating to their owners, enjoyable only in short bursts for everyone else.

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

A Almost any subject can be made into a short film. However, there are very few which are interesting enough to be made into full-length movies.

B When you study history the first things you learn about a new topic or period can be dull: the interest lies in the increasing fascination of the arguments and detail you discover as you read more deeply and get to know it, and the people, better.

C It is always a mistake to assume that just because people like you, they share your enthusiasm for babies and cats.

D My friends are just back from holiday. I shall be keen to see a few photographs but dread being invited round for a whole evening being enthusiastically shown pictures of the same group standing in front of different places.

E The problem with making films about subjects such as cats and babies is that there is not enough variety in their behaviour to be interesting for more than a short period of time.

23 The Universities Minister faced a torrent of criticism when he suggested that students could find themselves "cut-price degrees" at the last minute as universities charging the new maximum fee of £9,000 would slash prices to fill any vacant places. The chair of a group of student unions attacked the proposal, saying: "If a student qualifies for a place they will pay one amount, while someone who fails but then gets an unfilled place at the end will somehow pay less." Clearly this turns justice on its head.

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

A If you wait until the last minute to book a holiday you can often pay less than if you booked well in advance.

B Someone who applies for a job after the closing date should not be appointed over someone who applied in time.

C It would be wrong in any competitive event to reward those who are second-best more than those who win outright.

D Education should not be treated like a commodity which can be bought and sold.

E A convicted criminal should not be released early just because the prisons are overcrowded.

24 A hotel offers its guests a dinner allowance of £28.50 per night. A guest wishes to spend up to her allowance on a three course meal without overspending.

Here is the menu:

STARTER	PRICE (£
Soup of the day	5.00
Prawn cocktail	6.50
Smoked salmon	6.10
Duck confit salad	6.95

MAIN COURSE	
Sirloin steak 8 ozs.	14.90
Gammon steak	12.50
Rainbow trout	16.10
Duck a l'orange	15.15
Vegetarian risotto	12.75

DESSERT	
Cheese and biscuits	6.10
Cheesecake	5.60
Apple pie and cream	5.30
Lemon sorbet	5.20
Profiteroles	6.20

What is the largest sum she can spend without exceeding the limit?

A   £28.05

B   £28.30

C   £28.35

D   £28.40

E   £28.45

[Turn Over

25 Chris is an actor and recently feels he has become overweight. He aims to lose at least 7.5 lbs over the next 10 weeks. He decides he is able to walk the following number of miles over each of the next ten weeks:

Mondays – 5 miles

Wednesdays – 5 miles

Saturdays – 8 miles

Sundays – 8 miles

The table below shows calories burned per mile by walking at various speeds.

		Starting Weight								
		100lb	120lb	140lb	160lb	180lb	200lb	220lb	250lb	275lb
Walking speed	2.5mph	55	65	76	87	98	109	120	136	150
	3.0mph	53	64	74	85	95	106	117	133	146
	3.5mph	52	62	73	83	94	104	114	130	143
	4.0mph	57	68	80	91	102	114	125	142	156
	4.5mph	64	76	89	102	115	127	140	159	175
	5.0mph	73	87	102	116	131	145	160	182	200

NB: A lb in fat equals 3500 calories

What is the slowest speed he needs to walk at to lose at least 7.5 lbs if he starts at 180 lbs?

A 2.5 mph

B 3.0 mph

C 4.0 mph

D 4.5 mph

E 5.0 mph

26 The bar chart shows the amount of money in the savings accounts of three friends at the start of the year.

Account balance
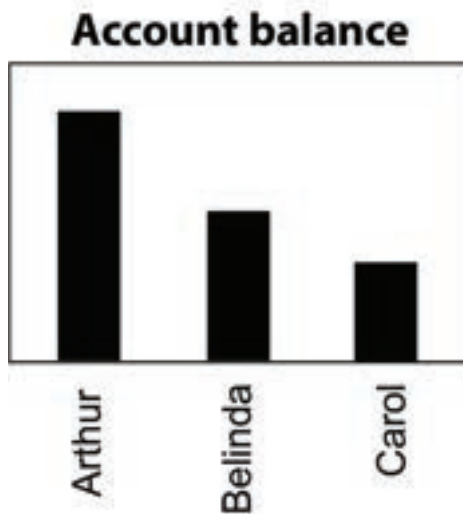
Since then, they have all spent the same amount of money from their accounts and the amount in Belinda's account has halved.

Which one of the following pie charts could represent the amounts of money in the accounts now?

A

B

C

D

E

[Turn Over
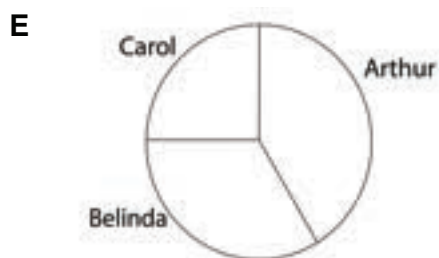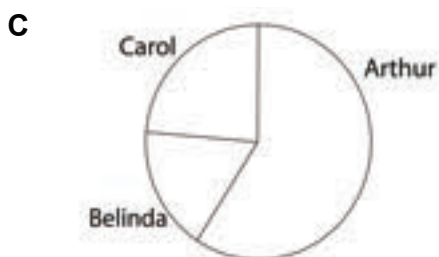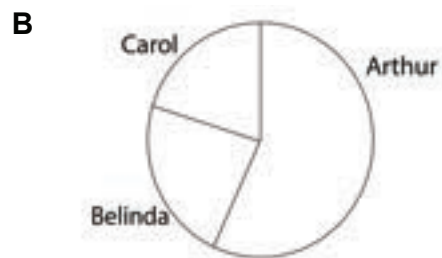
27 We need to find solutions to the problem of high levels of carbon dioxide emissions. A number of solutions are being proposed but one of the most promising is that of using willow trees as a fuel for generating electricity. There are many environmental advantages in using willow. Burning wood has the environmental advantage that in doing so one releases into the atmosphere only as much carbon dioxide as the trees themselves absorbed. In addition, plantations of willows will not only support the insects on which songbirds feed, but also, being trees that thrive in wet areas, they will help to conserve our threatened wetlands. Other countries, such as Sweden, have already recognised the advantages of using willow for fuel. We should follow their example.

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

A We need to solve the problem of the high rate of carbon dioxide emissions.

B We should use willow trees as a means of generating electricity.

C Using willow as a fuel will reduce the level of carbon dioxide emissions.

D Planting willows on a large scale will help conserve our wildlife.

E There are many environmental advantages in using willow trees for fuel.

28 Brazilian police in Bahia recently ended their strike over low pay, which lasted 12 days and saw the region's homicide rate double. During that time, politicians accused some police officers of causing panic by encouraging looting while on strike. Now the strike has ended they have offered an amnesty against the punishment of any striking officers as long as they did not commit any crimes during the strike. For their part, the officers have received a 6.5 per cent pay rise and have complained that they were played off against the public and ended their strike so they could properly police the Salvador carnival. The Government contest this and say their decision to stop salary payments to any officers still on strike is what made the police return to work.

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

A The police will halve the homicide rate in Bahia now they are back at work.

B The Salvador carnival will be policed by a full-strength police force on improved pay.

C The Government had to threaten to cut off police pay to get them to go back to work.

D The police were happy to accept a 6.5 per cent pay rise.

E The Government knows it was underpaying officers, which is why it chose not to punish them for going on strike.

29 When preparing for examinations, it is important that students do not suppress any emotional or other problems they might be having during their course of study. A good way of revealing problems is the creation of a partnership and a discussion between students, parents and teachers. This is far preferable to the problems only becoming apparent with the arrival of the results causing upset and disappointment for all concerned. Therefore, if schools and colleges create as many opportunities as possible for three-way meetings between students, parents and teachers, they will make a valuable contribution to their students' achievements in examinations.

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

   A   Other factors besides emotional problems are not important in determining examination success.

   B   The three parties involved are able to exchange views constructively when they meet.

   C   Students often do not communicate as well with their parents as they do with teachers.

   D   The problems revealed by the three-way discussion can always be solved.

   E   Emotional factors are just as important for students' success as their academic ability.

30 David has a new cycle computer but has not learned all the functions yet, so can only read the cumulative mileage and average speed of all of the journeys since he fitted it. On his first journey using it he covered 15 km at an average speed of 30 km/h. He can work out from this that the journey took him 15/30 hours or exactly 30 minutes. After the second journey, his cumulative mileage was 24 km and overall average speed 32 km/h.

What was his average speed on the second journey?

   A   18 km/h

   B   31 km/h

   C   34 km/h

   D   36 km/h

   E   45 km/h

[Turn Over

31   I have bought a combination lock for my bicycle. The combination is a three-digit number in the range 000-999 and it is currently set to the manufacturer's default combination of 999. Before I use the lock I need to set the combination. I want to use a combination where all three digits are different.

How many combinations are there in the range 000-999 where all three digits are different?

A   504

B   720

C   810

D   900

E   990

32 A regular octahedron is a solid composed of eight equilateral triangles, as shown in the image below:
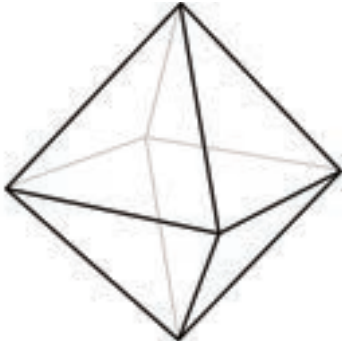
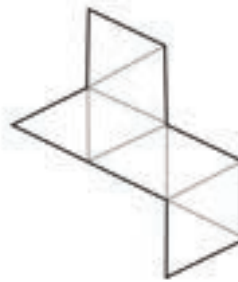
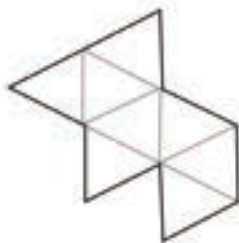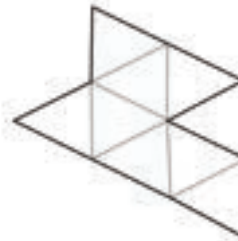Which one of the following paper shapes will fold into an octahedron?
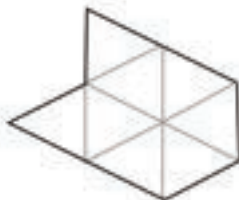
A

B

C

D

E

[Turn Over

33   It is a strange fact that many people find violence entertaining as long as it's fictional. Encountering a chainsaw-wielding maniac on television in one's own home is obviously less traumatising than meeting one at the bus stop. But is it actually fun? The same is often true of reading crime novels. Take, for example, the popularity of the violent Swedish 'Millennium Trilogy', also now made into films. Psychologists call this enjoyment 'the horror paradox'. However, today's increase in violent – and frankly unpleasant – crime proves that, for a growing number of people, simply reading about or watching horror on screen is not enough 'fun': they need to go out to stalk and horribly kill a passer-by to get their kicks.

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

A   Most murders take place within the family unit and are premeditated.

B   Fantasy violence in series like 'Star Trek' or 'Dr Who' has been around for many years.

C   It is younger people today who watch horror films or read crime novels.

D   Access to violence on DVD and TV makes a mockery of the film classification system.

E   It is quite easy for most people to tell the difference between fact and fiction.

34   A recent peaceful demonstration against government cuts ended in violence caused by relatively small numbers of 'anarchists' attacking police and property. Anarchism is a political philosophy, and as a group, anarchists tend to be unable to agree among themselves on exactly what it means. But what does it tell us about these events or about those involved if we call everyone with a brick in their hand an anarchist? Given that the central idea all anarchists have in common is the abolition of the state (not necessarily by violence), 'anarchist' is a daft way to characterise the violent hangers-on of a demonstration protesting not for but against the shrinking of the state.

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

A   The fact that some anarchists are peaceful does not mean that violent demonstrators cannot be anarchists.

B   The protesters against government cuts are not protesting against a shrinking of the state.

C   The presence of anarchists at a demonstration does not mean that they agree with its official aims.

D   The diverse nature of anarchism makes it possible to call anyone an anarchist, as even they do not know exactly what the word means.

E   The violent demonstrators want the Government to increase, not cut, spending.

35 Acting on government advice, schools in England now provide only semi-skimmed milk to pupils. This assumes that all children are similarly at risk of becoming obese and ignores the benefits full-fat milk may bring to many children, including vegetarians and those who are underweight. It is another example of the Government interfering unhelpfully in the way people live their lives.

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

    A   The Government assumes that all children are equally likely to become obese.

    B   There are benefits in some children being given full-fat milk.

    C   The advice is an example of unhelpful interference by the Government.

    D   Not all children should be given semi-skimmed milk at school.

    E   The Government's advice about milk will have a negative effect on health.

36 Lucy allowed an hour to travel to a job interview, intending to arrive exactly on time. The train which she took arrived ten minutes late by her watch. The taxi which she then took got caught in a traffic jam for an unexpected 15 minutes and walking to the appropriate room took five minutes longer than anticipated. The clock in the interview room was running 30 minutes slower than Lucy's watch which was running ten minutes fast.

According to the clock in the interview room, when did Lucy arrive?

    A   She was ten minutes early.

    B   She was ten minutes late.

    C   She was thirty minutes late.

    D   She was sixty minutes late.

    E   She was on time.

37 My current membership of the squash club is about to expire and so I wish to renew it. The options available to me are given in the table below and have not changed since I joined as a new member six months ago (a change in membership type counts as a renewal, not a new member).

Membership type	Length	Extras	New member (£	Renewal price (£
Bronze	1 year	none	10	8
Silver	6 months	free locker	25	18
	1 year	free locker	45	28
Gold	6 months	free locker free competition entry	40	32
	1 year	free locker free competition entry	75	52

I am currently a Gold member, but I do not want to enter competitions any more as I play only once a month. I do need a locker when I visit and the normal cost to hire a locker is £2 per visit. I want to choose a membership that will give me the smallest possible total cost for a full year.

What will be the difference between the amount that I will pay now and the amount I paid six months ago?

A I will pay £32 less.

B I will pay £30 less.

C I will pay £12 less.

D I will pay £8 less.

E I will pay £5 more.

38 The table shows the number of children in the town of Lancester aged 11 and 16 who play various sports after school.

Sport	11-year-olds	16-year-olds
Football	120	181
Cricket	120	133
Hockey	55	66
Swimming	104	150
Tennis	123	149
Squash	51	97

In which sport was the proportion of 11-year-old to 16-year-old children nearest to that for swimming?

A Football

B Cricket

C Hockey

D Tennis

E Squash

39 Many argue that successive government programmes to increase road safety have caused a progressive decline in the number of accidents on our roads. However, some observers have shown that the real number of accidents may be much higher than those officially recorded, with many accidents simply not being reported by drivers. They also point to the fact that, during the most recent period in which accident figures decreased, hospital admission rates for road accidents have remained fairly constant.

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

A Optimism about ever-improving road safety may be unfounded.

B Government programmes have been unsuccessful in reducing the number of accidents.

C Hospital admissions are a good way of measuring changes in the number of accidents on our roads.

D Road safety has improved greatly in recent years.

E Drivers should be required to report all accidents that occur on the road.

[Turn Over

40   Concern has been expressed about the UK Government policy of expanding the number of university places available. It is argued that the economy does not need the number of graduates that this policy produces. However, graduate unemployment has actually decreased since the policy of expansion was implemented. This shows that the Government has wisely anticipated the employment demands of an expanding modern 'high-tech' economy and that the policy of increasing the supply of university places is an appropriate response.

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

    A   An increasing number of graduates is necessary for any economic growth.

    B   Modern 'high-tech economies will always need a substantial supply of graduates.

    C   Graduates have not taken large numbers of jobs previously done by non-graduates.

    D   Many jobs done by graduates do not require a graduate qualification.

    E   Expansion of university places is always in response to the needs of the economy.

41   The number of crimes carried out by girls has increased significantly. The rise in offences such as criminal damage, public disorder, robbery and minor assaults by girls under 18 are all seen as linked to a rise in alcohol consumption. So the greater availability of alcohol is contributing to rising crime levels among young girls.

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

    A   Greater alcohol consumption is associated with crime in males as well as females.

    B   Girls who commit offences are now more likely to be prosecuted for them.

    C   The greater availability of alcohol affects all age groups.

    D   Offences of violence and disorder were traditionally associated with males.

    E   Girls under 18 are drinking to much higher levels than in previous years.

42 The table below shows the mean maximum daily temperature for Oxford for each year from 1905 to 1920 along with a moving 5-year average (the value shown beside 1920 is the average from 1916 to 1920 inclusive). Three values are missing from the table.

Year	Mean maximum daily temperature	5-year moving average
1905	13.4	13.40
1906	14.4	13.56
1907	13.4	13.60
1908	13.7	13.66
1909	x	y
1910	13.3	z
1911	14.9	13.66
1912	13.7	13.72
1913	14.2	13.82
1914	14.7	14.16
1915	13.6	14.22
1916	13.3	13.90
1917	12.8	13.72
1918	13.8	13.64
1919	13.0	13.30
1920	13.8	13.34

What value should be in the position marked 'y'?

A   13.30

B   13.64

C   13.58

D   13.66

E   13.72

[Turn Over

43 Fred is carrying out a three-year biological survey which depends on anglers sending in scale samples of fish that they catch. The survey covers five rivers and Fred has set a target for the numbers of sets of fish scales returned from each river each year. Unfortunately, by the end of the second year the number of scale sets returned has fallen well short of target.

River	Annual target of scale sets	Scale sets obtained		Number of anglers sending scale sets		Percentage of target achieved	
		Year 1	*Year 2*	*Year 1*	*Year 2*	*Year 1*	*Year 2*
Dark	250	77	125	5	30	31	50
Fare	100	85	35	20	8	85	35
Gwynt	500	71	132	19	2	14	26
Tine	250	105	66	43	19	42	26
Yarrow	250	80	150	18	25	32	60

The anglers who participated in the survey sent scales from all the fish they caught.

For which river was the average catch per angler sending in scales the highest in any one year?

A   Dark

B   Fare

C   Gwynt

D   Tine

E   Yarrow

44   Allan wishes to visit a client on floor 8 of a building with 10 floors (including the ground floor). He enters the lift on the ground floor. His client has explained by email that the floors are indicated by an illuminated matrix but there is a notice stating that two of the lights are not working.

MATRIX   HOW FLOORS ARE INDICATED
WHEN ALL THE LIGHTS ARE WORKING

Allan enters the lift and pushes the button. Just then he starts to sneeze, distracting his attention from the display. The lift leaves the ground floor, travels, then stops. He glances at the display and concludes he could be on floor 8 so he gets out. In fact he is on the wrong floor.

On how many of the floors could Allan have got out by mistake?

A   5

B   6

C   7

D   8

E   9

45   Some people believe that raw food is healthier than cooked food because cooking destroys vitamins. However, we should be grateful that our ancestors discovered how to cook. Researchers have found that people who stuck to a raw food diet for three years suffered from chronic energy deficiency and lost a lot of weight. Cooked food is easier to digest, so enables us to take in the necessary calories without too much expenditure of energy. Cooking also removes toxins from food, making cooked food safer. This has the result that our bodies are not very good at disposing of toxins naturally, but this is not a problem provided that our diet consists principally of cooked food.

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

A   Raw food is no better for our health than cooked food.

B   Human bodies are not very good at disposing of toxins.

C   We should be grateful that our ancestors discovered cooking.

D   A raw food diet can cause lack of energy and weight loss.

E   Cooked food is both safer and easier to digest than raw food.

[Turn Over

46   The level of light pollution must be low in order to be able to observe the moon, planets and stars. My house is in the darkness of the countryside so stargazing will always be possible from my back garden.

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

A   My train must be on time if I am going to catch my plane. The train is now half an hour late so I will not get to the airport on time.

B   My doctor has told me that contact with a sufferer is necessary if someone is to catch flu. Ten members of my class now have flu so I am bound to catch it.

C   We need to have an exceptionally high tide on this part of the coast for flooding to occur. There has not been a flood so therefore there cannot have been exceptionally high tides.

D   Boiling water is essential to make an excellent cup of tea. The water used to make my aunt's tea was not hot enough so she did not enjoy it.

E   The finest wines in the world come from France. I buy French wines to ensure that I always have the best.

47   Although boxing is unacceptable, other risky sports are not. When people get injured or killed in horse sports, motor sports or while climbing, yachting or skydiving it is because things have gone horribly wrong. When people get killed in boxing it is because things have gone horribly right. The aim of any boxing match is to cause more permanent brain damage to your opponent than you yourself sustain.

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

A   Laws are made to protect people from risks of which they are not fully aware.

B   Medical treatment should be limited to those who do not pursue lifestyles which cause medical conditions.

C   Spectator events where people take pleasure in others' misfortune should be banned.

D   We should not make bonfire parties illegal in the way that arson is.

E   Different attitudes to risk in life can be expressed in sport.

48 Amy is researching her family history. She has two parents and four grandparents. However, she discovers that, among her great grandparents, two sisters from one family married two brothers from another.

How many great-great grandparents has she?

A 8

B 10

C 12

D 14

E 16

49 The West Water Canoe School offers tuition in basic canoeing skills. There are 18 canoes for students to use. The school offers a minimum instructor to student ratio of 1:6 and a minimum of two instructors for any group.

Instructors are hired by the centre on a casual basis and are paid only for the time they actually work. Instructors are paid £6 per hour and are expected to use their own canoes.

The cost for students depends on the numbers in the group and the length of the session. Costs are set out in the table below.

Number in group	Cost per student for first hour	Cost per student for subsequent hours
1 to 2	£12	£10
3 to 6	£10	£8
7 to 10	£8	£6
more than 10	£7	£5

What is the maximum profit the centre can make from a group after paying the instructors for a two-hour session?

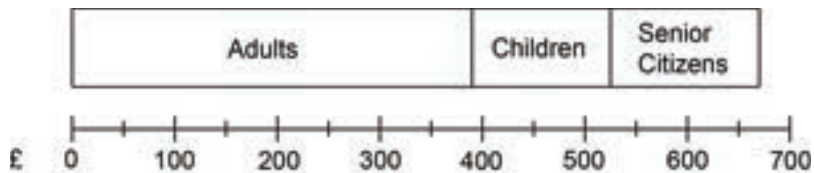**A** £108

B £180

C £198

D £216

E £360

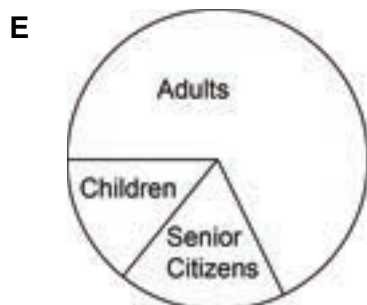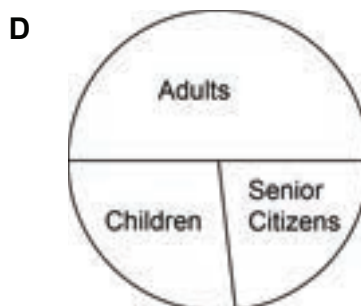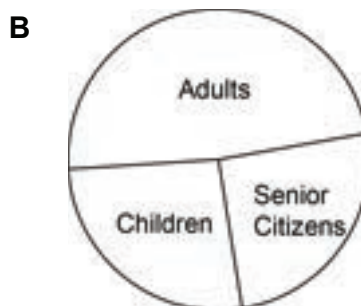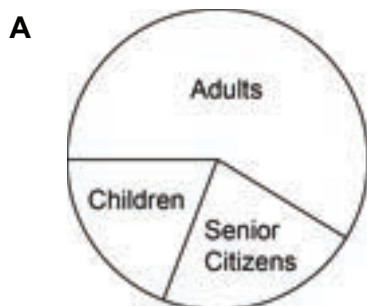**50** The cost of entry to the Victoria and David Museum is as follows:

Adults £7

Children £4

Senior Citizens £5

This chart shows the breakdown of yesterday's total takings of £679 by age group.

Which one of the following pie charts shows the number of visitors in each age group that paid to enter the museum yesterday?

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