THINKING SKILLS   **9694/01**

Paper 1 Multiple Choice   **November 2007**

                                                                      2 hours

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

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

There are **45** questions on this paper. Answer **all** the questions.

For each question there are five possible answers **A**, **B**, **C**, **D** and **E**. Choose the **one** you consider correct and record your choice in pencil on the separate answer sheet.

Read very carefully the instructions on the answer sheet. Ignore responses numbered 46 – 50 on the answer sheet.

INFORMATION FOR CANDIDATES

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

This document consists of **30** printed pages and **2** blank pages.

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1   The table below shows the death risks for different travel modes in the European Union (shown for both distance and time) for the period 2001/2.

Deaths per 100 million person kilometres	
Road	0.95
Motorcycle/moped	13.8
Foot	6.4
Cycle	5.4
Car	0.7
Bus and coach	0.07
Ferry	0.25
Air (civil aviation)	0.035
Rail	0.035

Deaths per 100 million person travel hours	
Road	28
Motorcycle/moped	440
Foot	75
Cycle	25
Car	25
Bus and coach	2
Ferry	16
Air (civil aviation)	8
Rail	2

According to figures in the table, which of the following journeys is the "safest"?

A   Aircraft journey of 2 hours.

B   Coach journey of 200 km.

C   Cycle ride of 10 km.

D   Ferry trip of 4 hours.

E   Railway journey of 500 km.

2 There are four Political Parties in Cyclonia. They are the Levant Party, The Mistral Party, the Sirocco Party and the Zonda Party.

Cyclonia has a National Parliament, and also each of its five Provinces has its own Provincial Assembly.

The National Parliament has 360 seats, and the current state of the Parties is:

Sirocco – 173 seats
Mistral – 112 seats
Zonda – 46 seats
Levant – 29 seats

In the Provincial Assemblies the seats held by each party are:

	Sirocco	Mistral	Zonda	Levant
Northern Province (150 seats)	71	52	16	11
Eastern Province (108 seats)	54	34	13	7
Southern Province (120 seats)	58	37	15	10
Western Province (90 seats)	43	30	11	6
Central Province (144 seats)	70	48	16	10

For which Province would a pie chart of the state of the parties most closely resemble a pie chart of the state of the parties in the National Parliament?

A   Northern Province

B   Eastern Province

C   Southern Province

D   Western Province

E   Central Province

3 The travel company Flyaway has a 10-seater minibus which can be hired by groups for transfer to Gatrow Airport for up to $180. For smaller groups the charge is $80 for the first passenger plus $20 for each subsequent passenger, to a maximum of $180.

Which of the following bar graphs correctly illustrates how the cost per passenger of hiring the Flyaway minibus varies with group size?

A

B

C

D

E
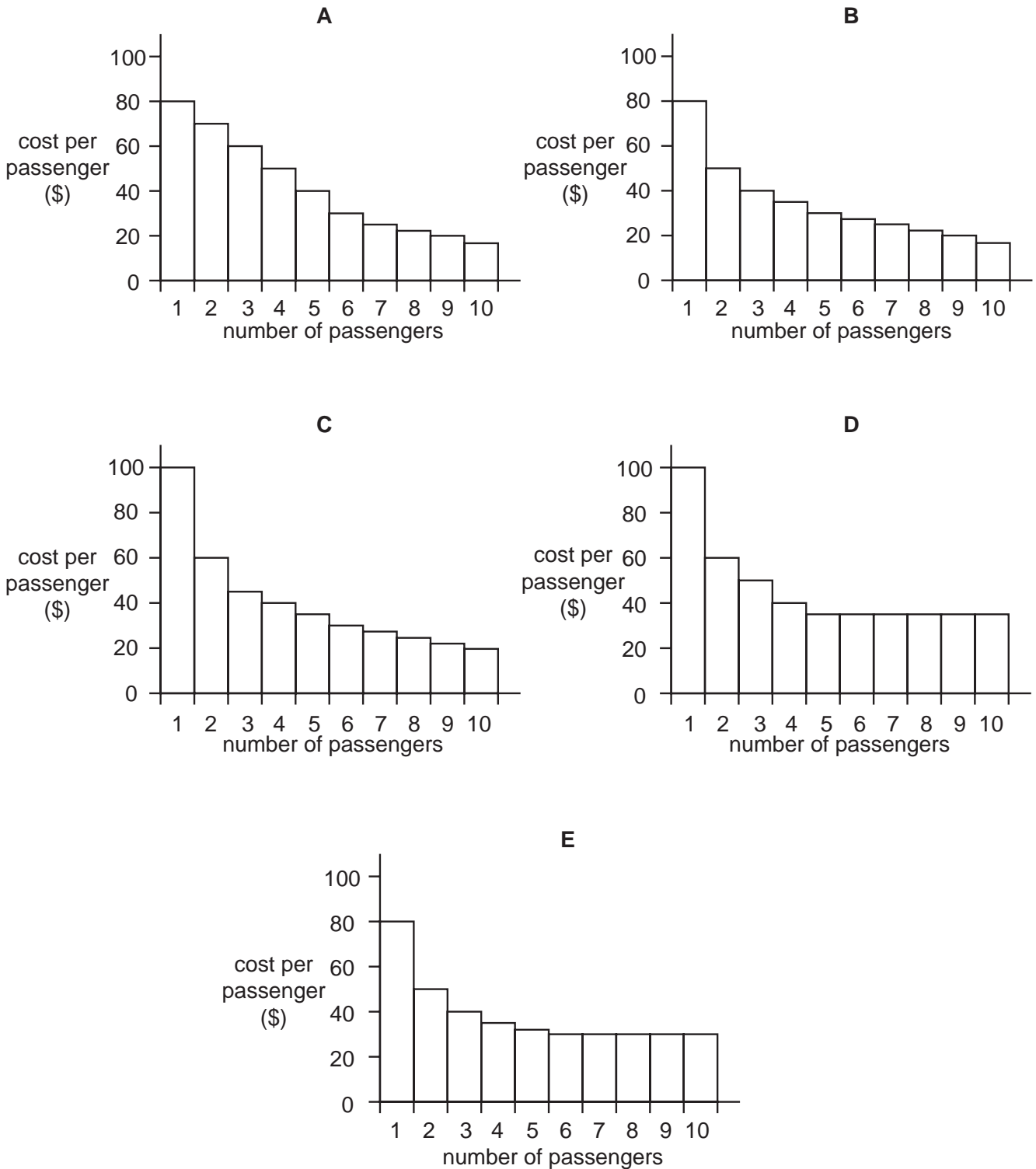
4 Maria aims to make a clear (net) profit of $30 000 by buying and selling a house. She intends to sell three years after buying. She expects the following.

- The value of the property will increase by 20% by the end of three years.

- The gross profit made upon selling will be taxed at 40%.

- 10% of the gross profit will be needed to pay her lawyer and estate agent fees.

How much should Maria pay for the property in order to achieve her desired profit if her expectations come out true?

A $300 000

B $330 000

C $360 000

D $390 000

E $420 000

5 At noon Andy drives out of Alphaville. He drives due West at a constant speed of 60 km/hour.

At noon Brian is 90 km due South of Alphaville and drives at a constant speed of 30 km/hour towards the town.

At what time will Andy and Brian be exactly the same distance from Alphaville?

A 12.30 pm

B 1.00 pm

C 1.30 pm

D 2.00 pm

E 2.30 pm

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

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

A Lions are under threat because of increasing populations of people in their natural habitats. Conservation efforts are being planned to avoid the extinction of lions.

B A zoo in Thailand has dropped plans to serve giraffe and tiger for dinner in its restaurant. There were many complaints from conservationists.

C Fossil dung collected in Pisdura, near Nagpur in India, contains evidence that dinosaurs ate grass. Scientists had thought that grass was not around at the same time as dinosaurs.

D Studies have long suggested that music helps children learn mathematics. New research indicates that musical training helps children acquire a second language.

E Ants use chemical signals to tell other ants which paths lead to food, and which do not. Research into these signals should be funded, as it might lead to products to keep ants away from human food stores.

7 Most people have some plant viruses in the gut. The most common plant virus found in people is pepper mild mottle virus, which infects chilli peppers. Researchers did not find the virus in fresh peppers, but it was easy to find in hot sauces and chilli powder.

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

A Diseased chillis tend to be used in hot sauces and chilli powder.

B Human sewage is often used to fertilise chilli peppers.

C People eat more chilli powder than fresh chilli.

D Plant viruses cannot survive for long inside humans.

E Fresh chilli peppers cannot be a source of pepper mild mottle virus.

8 A lie detector is being developed which can test a person without their knowledge. It will train a laser or microwave beam on 'moving and non-cooperative subjects'. People around the world should protest noisily about such developments, which represent a terrifying assault on the liberty and dignity of the individual. Such gadgets also worsen a situation in which anyone and everyone may be watched and tested at any time. Issues of reliability may mean that people are convicted of crimes on very weak evidence.

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

A Lie detectors will soon work on people who do not wish to be tested.

B It is wrong to use lie detectors if a person does not agree to it.

C There should be strong and global objections to such gadgets.

D Evidence from lie detectors should not send people to prison.

E Such developments threaten everyone's freedom and privacy.

9 There has been no change in the supply of petrol to petrol stations, but rumours of a shortage have led to panic buying and long queues with some stations running out of fuel. Motorists determined to have a full tank in case there is a real shortage are filling up at every opportunity. Some petrol stations are now considering limiting each customer to a maximum of 15 litres of fuel, but this may increase the length of queues as motorists queue up more than once. The way to get rid of queues is for petrol stations to insist that customers must put at least 40 or 50 litres of fuel in their tank!

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

A The average fuel purchase by motorists before the panic was 42 litres and during the panic was 20 litres.

B The average fuel purchase by motorists before the panic was 22 litres and during the panic was 40 litres.

C The panic has resulted in many more people cycling or taking the train to work.

D The price of petrol is now rising steeply.

E There are now only a handful of people who think there has been or will be a fall in fuel supplies.

10 Many businesses make their important policy decisions in the process of group discussions. When participating in such discussions, people have a tendency to conform to opinions expressed by others, particularly to those opinions expressed by authority figures. Psychologists have shown that when people are in a group, they will say they agree with others' judgements, even about factual claims that they know are false. Therefore policy decisions made during group discussions are likely to be bad decisions. A group will collectively agree on a plan of action that many of the individuals within the group may privately think is mistaken. Thus group members' objections to the plan will not have been considered.

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

A Policy decisions should be made by individuals acting alone.

B Participants in group discussions cannot make reliable judgements.

C Making good policy decisions requires consideration of objections.

D During group discussions, individuals never express their true opinions.

E The opinions of those who disagree with authority figures are likely to be ignored.

11 Ashley's journey to work each morning includes a 12 minute bus ride from Flinchester to Warnham Station and 23 minutes aboard the train from Warnham to Pontford.

Buses from Flinchester to Warnham start from Vanton at 10, 25, 40 and 55 minutes past each hour, stopping at Flinchester 18 minutes later.

Trains for Pontford depart from Warnham every 20 minutes from 6.35 onwards.

Ashley leaves home every morning at 7.50, taking 3 minutes to reach the bus stop in Finchester.

At what time does Ashley arrive at Pontford Station?

A 8.28

B 8.33

C 8.38

D 8.48

E 8.58

12 Yahtzee is a game which involves throwing five dice simultaneously.
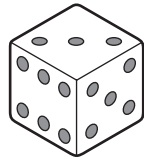
During a recent game one of my throws resulted in the unusual situation of the same three numbers being visible on all five dice, as follows:
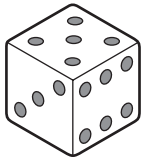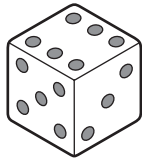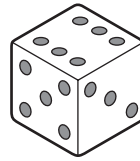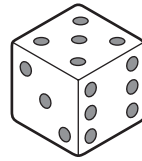

A	**B**	**C**	**D**	**E**

I realised that the dice were not all identical. Closer inspection of all the faces led me to conclude that the five dice consisted of two different pairs of identical dice and an "odd one out".

Which die **A**, **B**, **C**, **D** or **E** is **not** identical to any of the others?

13 In the early stages of the Fantasy-World Cup the 24 competing teams are divided into four Groups of six. In each Group all teams play each other once, and the Group Winner progresses to the semi-finals. Teams gain 3 points for a win, 2 points for a score draw (1 – 1, 2 – 2 etc) and 1 point for a scoreless draw (0 – 0).

This is the final table for Group 3:

	Played	Won	Drawn	Lost	Goals For	Goals Against	Points
Narnia	5	3	2	0	10	2	12
Omnia	5	3	1	1	8	2	11
Xanadu	5	2	1	2	8	6	8
Utopia	5	2	1	2	5	6	7
Lilliput	5	1	1	3	2	9	5
Ruritania	5	0	2	3	2	10	4

Narnia were losing 2 – 0 during their last match, but two late goals from Tumnus, Narnia's striker, ensured qualification for the semi-finals.

Against which team did Narnia draw 2 – 2 in their last group match?

A Lilliput

B Omnia

C Ruritania

D Utopia

E Xanadu

14
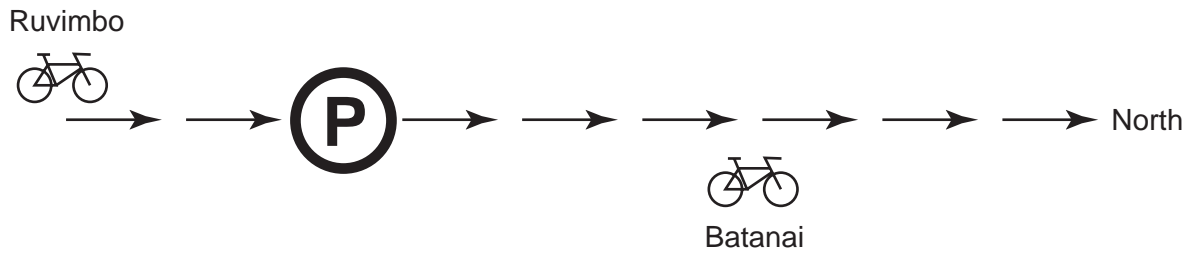
Two cyclists travel North. Batanai left the parking zone 'P' after a short break at 10.00. At 12.00 Ruvimbo is 30 km South of the parking zone.

Ruvimbo travels at 40 km/hour and intends to take a 15-minute break at the parking zone.

Batanai travels at 20 km/hour.

At what time will Ruvimbo be 20 km ahead of Batanai?

A   15.00

B   15.30

C   16.00

**D**   16.30

E   17.00

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15 I put a cube of sugar into my tea, and stir gently to ensure that the cube doesn't sit on the bottom of the cup. The rate at which sugar goes from the cube into the tea is fixed in proportion to the remaining external surface of the sugar cube.
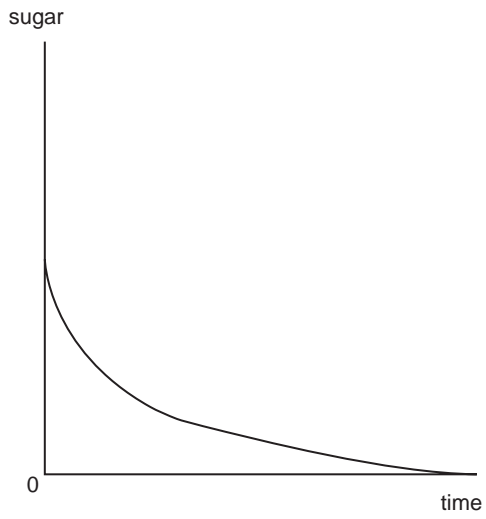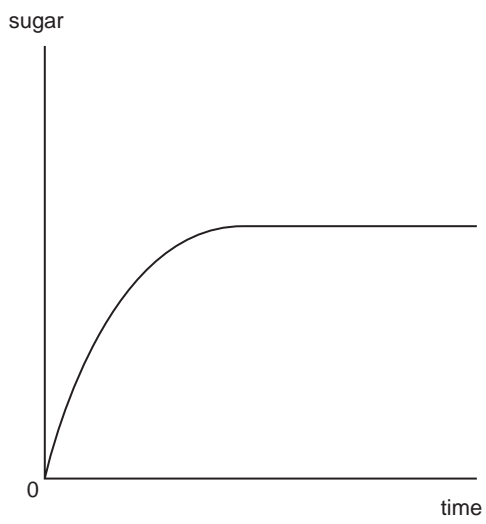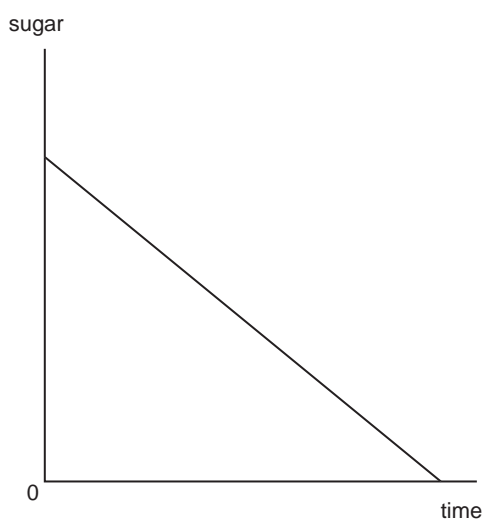
Which of the following best shows the amount of sugar that has dissolved in the tea over time?

A

B

C

D

E

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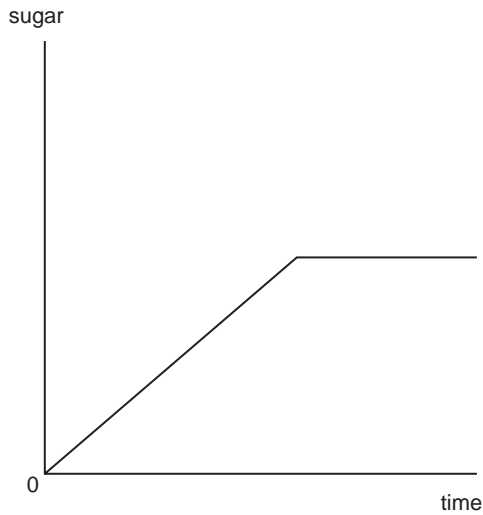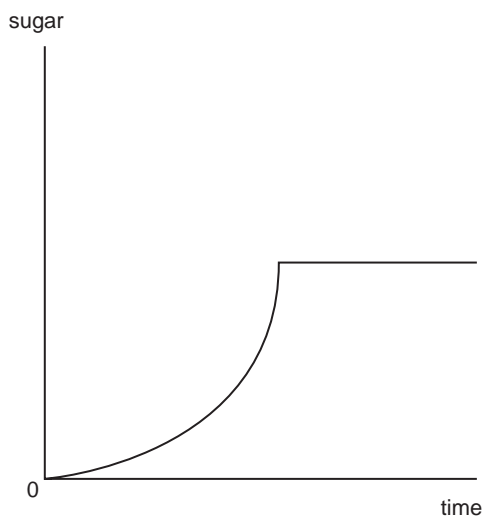
16 Being poor does not mean being disadvantaged in every way compared to the rich. For instance, more than 75% of children from families with incomes of $100 000 per year have undergone some form of treatment from a dental surgeon by the time they are 12 years old; for families with incomes of less than $20 000 per year the figure is less than 20% despite the fact that poor families consume just as much sugar as rich families. Children from poor families do not have their own computers or MP3 players, unlike the children of the rich, but they do have better teeth.

Which of the following identifies a **major flaw** in the above argument?

A It ignores the dental health of children from families with incomes between $20 000 and $100 000 per year.

B It ignores the fact that the rich have better housing and safer environments.

C It wrongly assumes that all children from rich families have their own computers or MP3 players.

D It wrongly assumes that fewer dental treatments necessarily mean better dental health.

E It wrongly assumes that no children from poor families have their own computers or MP3 players.

17 Recent studies report that potentially harmful man-made chemicals have been found in the blood of children. This does not indicate that the health of the present generation of children is at serious risk. It is predictable that blood contains chemicals because any chemical more soluble in oil than in water will accumulate in biological tissues. However, any such chemicals will not remain there for long, because our bodies can change them into water-soluble substances that can be excreted. The presence of these chemicals does not necessarily indicate either a new or a large risk. The reason why they have been detected now is that modern methods of analysis are so sensitive as to be able to detect very low levels of chemicals in the blood.

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

A The present generation of children is as healthy as previous generations.

B Any chemical in the blood will be harmful if present in large quantities.

C Children have always had potentially harmful man-made chemicals in their blood.

D Low levels of man-made chemicals in a child's blood for a short time are unlikely to be harmful.

E Man-made chemicals that remain in the blood for a long time can cause serious health problems.

18 Approximately 10% of people are left-handed. Given that left-handedness is genetically transmitted from parents to their children, it is a mystery why it did not die out in prehistoric times. Left-handed people have more health problems, and are at greater risk of serious injury than those who are right-handed. In prehistoric societies, in which violence and aggression would have been common, these relative weaknesses of the left-handed would have been greatly disadvantageous to survival. They would have been much more likely to sustain fatal injuries in a fight, or to suffer serious illness at an early age. Thus they would have been at risk of dying before they had children, which would reduce the chance that the characteristic could be passed on to future generations.

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

A In prehistoric societies less than 10% of people were left-handed.

B Left-handed people are generally more artistic than those who are right-handed.

C In prehistoric societies those who suffered from poor health generally died when very young.

D In hand-to-hand combat, left-handers have the advantage of surprise over right-handers.

E Many uncommon characteristics, for example colour blindness, are genetically transmitted.

19 "Many important football (soccer) matches are settled by a 'penalty shoot-out' if the teams are drawing after 'extra time'. It is possible that the team which was superior during the match might end up losing simply because they took dreadful penalties in the 'shoot-out'. For example, the FA Cup Final in May 2005 was drawn 0 – 0 after 'extra time'. Despite being completely outplayed by Manchester United for the whole of this match, Arsenal won the match 'on penalties'.

However, for financial and logistic reasons, the match had to be settled on the day, whether or not the Manchester United supporters felt cheated by the defeat of their team.

Although many people consider it to be unfair, replays are too costly and are difficult to organise, so penalty shoot-outs are the only way to decide a match in such circumstances."

After the above three paragraphs were read out on a TV programme, a leading football commentator replied:

"Yes, but a survey was conducted. 80 000 Arsenal supporters were contacted. 98% admitted that (although they were pleased with the result) it was totally unfair that Manchester United lost the 2005 FA Cup Final."

Does the football commentator's reply:

A strongly support the main argument?

B give some support to the main argument?

C neither strengthen nor weaken the main argument?

D slightly weaken the main argument?

E seriously undermine the main argument?

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

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

A Planets are round because gravity pulls large objects into a spherical shape. We all think of planets as round.

B A system has been developed which helps countries such as Indonesia to decide what the rainforest is worth. This system takes local people into account.

C Ice skating is a wonderful pastime. It is now possible to ice skate and snowboard in a snow centre in Dubai. This centre will use a great deal of electricity.

D Planting more trees may not be the answer to global warming. Although trees absorb carbon dioxide, scientists have recently discovered that plants produce methane. Methane, like carbon dioxide, is a powerful greenhouse gas and greenhouse gases raise atmospheric pressure.

E People who live in bright, sunny countries suffer less from depression than people who live in countries which have dark, gloomy winters. People who live in snowy countries are less likely to suffer from winter depression.

21 On 1st January the manager of a large organisation learns that the company is about to be taken over. He sends emails to five colleagues to inform them of the news.

On 2nd January these five colleagues each send out five emails informing other colleagues.

On 3rd January those colleagues who heard the news on the 2nd January each send out four emails informing other colleagues.

On 4th January those colleagues who heard the news on 3rd January each send out ten emails informing other colleagues.

On the first three days that the rumour of this take-over was being spread, recipients of the information only received one email each. On the 4th January, however, two-thirds of recipients received emails from two different colleagues informing them of the news. The remainder just received one email.

How many colleagues received **two** emails on the 4th January?

**A** 200

B 300

C 400

D 500

E 600

22 In a particular organisation the workers are on different pay schedules. On a particular four-hour shift, the following individuals are paid as follows:

- Michael is paid $5 per hour plus a guaranteed 'attendance bonus' of $10 for starting the shift.
- Katy is paid $5 per hour.
- Shaun is paid $10 per hour.
- Patrick is paid $3 an hour plus a guaranteed 'attendance bonus' of $20 for starting the shift.
- Suzanne is paid $5 per hour plus a bonus of $10 if she completes the four-hour shift.

Consider the graph presented below. The four lines of this graph, if the axes are appropriately labelled, represent the relative pay schedules of four of the above workers – one of the workers is **not** represented.

The vertical axis represents the amount earned as the shift progresses. The horizontal axis represents the passage of time over the four-hour shift.
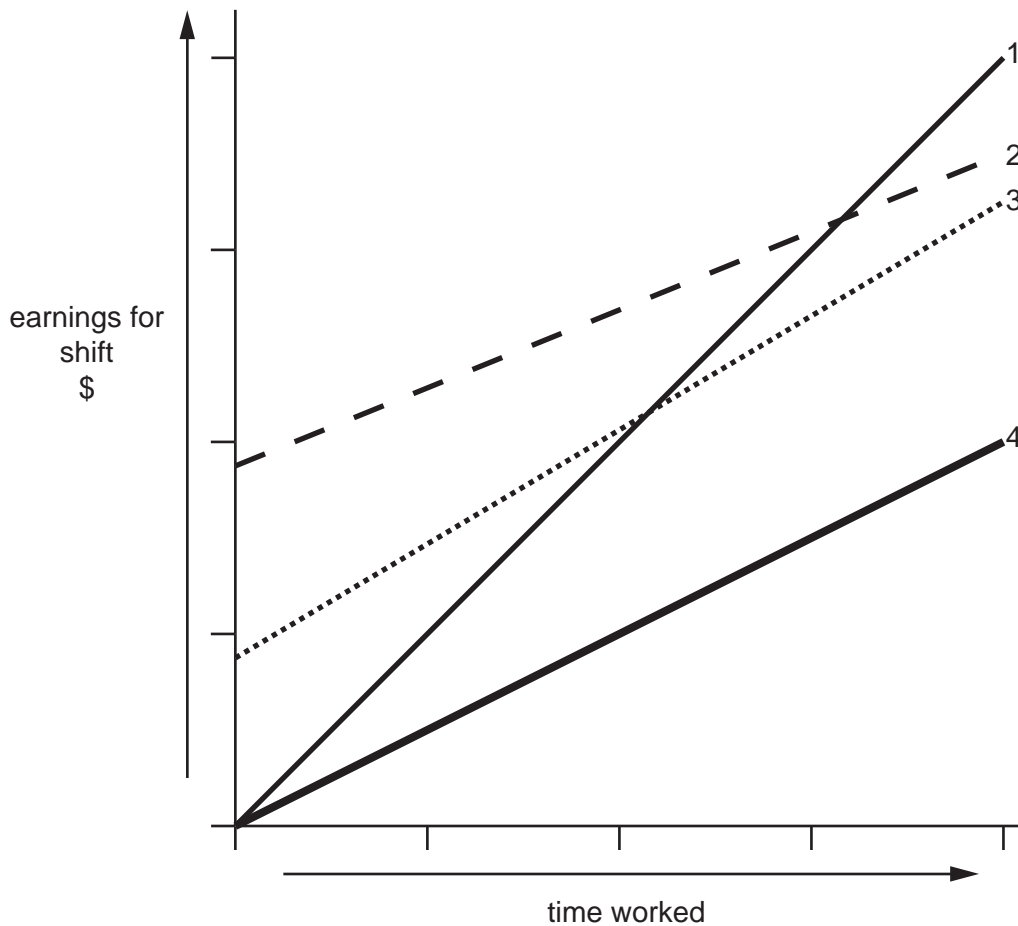
Which of the five workers is **not** represented in the graph?

A Michael

B Katy

C Shaun

D Patrick

E Suzanne

23 We have always applied the strict rule that the number of children coming to a birthday party should be equal to the age of the child: seven for a seven-year-old, etc. Each guest brings a present to each party. Our children are now 3, 6, and 7.

How many presents have been received in all?

A 16

B 28

C 39

D 55

E 84

24 There is some consistency in the letters assigned to the seats in each row on aircraft, but it is not perfect, and there is no consistency in the placement of the aisle(s).

- One window seat is A, and C is usually an aisle seat.
- There is no I.
- K would be a window and it doesn't go any further along the alphabet.

The seats are in alphabetical order, but more than that one cannot be sure.

When there are wide-bodied planes with 10 seats across it is generally ABC DEFG HJK, and in smaller planes with 6 seats across ABC DEF.

When there are 5 seats, some airlines call them AC DEF, or possibly AC D HK although charter flights might have AB CDE, or something else.

Four of us are sitting together in a row, and the aircraft has 8 seats across. Two of us have seats D and H.

Which of the following could **not** be the other two?

A B and F

B C and G

C E and F

D E and G

E G and J

25 The new coffee cups we have are designed to be a better fit in the cup-holders in the car. They are circular, and look like this from the side:
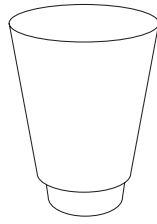
How does the amount of coffee vary with the depth when the cups are upright?

A

B

C

D

E
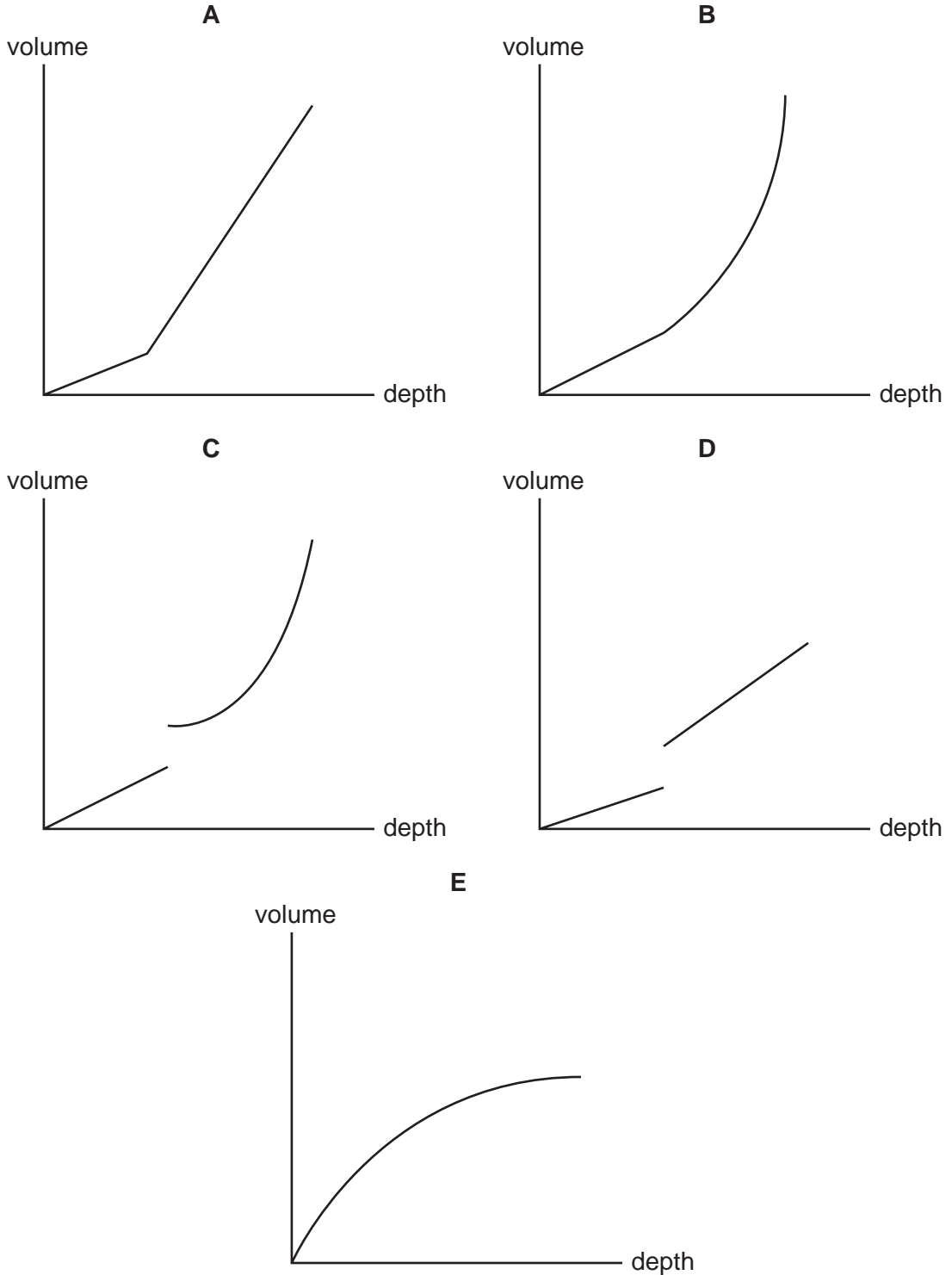
26 In May 2005, Liverpool played soccer against AC Milan in the final of the Champions' League in Istanbul. Liverpool were losing 0 – 3 at the start of the second half. It seemed to most commentators and supporters that Milan's lead was so strong that they were assured of winning the match.

During a dramatic second half, Liverpool scored three goals and drew the match 3 – 3. They then went on to lift the trophy after winning the 'penalty shoot-out'.

Which of the following can be drawn as a **reliable conclusion** from the short paragraphs above?

A Losing so heavily at the start of the second half inspired Liverpool to play more skilfully and energetically during the remainder of the match.

B Drawing the match 3 – 3 after leading 3 – 0 upset and depressed the AC Milan players so much that they couldn't take effective penalties in the 'shoot-out'.

C A substantial lead at half-time in a soccer match is no guarantee of victory.

D AC Milan started the second half with an over-confident attitude.

E Liverpool played poorly in the first half.

27 The arguments in favour of banning the use of mobile phones in cars are all flawed. They depend on a caricature of an arrogant, careless phone user and extend it to all cases. The distractions of a phone are no greater than that of a radio or a normal 'face-to-face' conversation. The data on accidents involving phone users ignores both the unreliability of evidence on how much people use their phones in cars, and the lack of evidence on the other causes of accidents. The arguments about phone use are a distraction from the more important focus on preventing high-speed "macho" driving, and the accidents which that causes.

Which part of the above argument **depends on an analogy**?

A The second sentence.

B The third sentence.

C The fourth sentence.

D The fifth sentence.

E No part of the argument.

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

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

A Research shows that domestic cats lack the gene which allows most animals to taste sugar. For this reason they eat only meat and do not eat sugary foodstuff.

B Domestic cats are not the only members of the cat family which don't eat sugary foods. Scientists have found this is true of the 'big cats' like lions and tigers, as well.

C Cats need a high protein diet to survive which only meat can provide. It seems likely that the lack of the gene to taste sugar is an evolutionary adaptation to make sure they only eat meat.

D We cannot be sure whether cats' lack of taste for sugary foods is the result of a genetic adaptation to their need to eat a meat diet or if the meat diet is the result of their lack of taste for sugary foods.

E Cats are famously 'fussy eaters'. They often leave food which their owners then have to throw away. The cat then often stalks around miaowing for more food.

29 One of the most successful genres throughout the history of cinema has been the horror film. This is understandable, since fear is a strong emotion and the fear of death is the strongest fear of all. In order to increase the fear factor further, film makers often deploy supernatural agents such as ghosts or evil spirits. Yet such efforts are ultimately self-defeating. For if there are ghosts and evil spirits at work, then there is no longer any need to fear death, since death cannot be the end of our lives. Therefore it is irrational for us to be frightened of horror films where the supernatural is involved.

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

A Fear is not a purely rational response in human beings.

B It is impossible to measure the success or otherwise of an entire genre.

C Modern special effects can make supernatural agents believable.

D Psychological thrillers can often be more frightening than horror films.

E The sole purpose of a film is not to create an emotional response in the audience.

30 The problem with individuals taking actions to make themselves safer is that it often makes for more danger to others. For instance changing from a small car to a large car such as a SUV (Sport Utility Vehicle) might make the people in the SUV safer but feeling safer certainly won't make a driver drive more safely, and if the SUV hits a pedestrian or cyclist then it is likely to do far more damage than a smaller car would.

Which of the following items of evidence would, if true, **support** the above argument?

A Air travel is the safest method of travel when safety is measured in deaths per passenger mile, but when there is an aircraft accident it is usually catastrophic.

B Cyclists wearing helmets suffer lesser injuries than cyclists not wearing helmets.

C Most people who buy SUVs put safety as their prime consideration when choosing a car.

D When legislation was introduced to make the use of seat belts in cars compulsory, the number of road accidents increased, but the extent of personal injury to drivers decreased.

E Young males, who are responsible for most road accidents, aspire to fast small sports cars or motorcycles and not SUVs.

31 The draw has been made for this year's Middle-earth Cup, as follows:

First Round

Match 1	Harrowdale	v	Rushey
Match 2	Nardol	v	Haysend
Match 3	Upbourn	v	Bucklebury
Match 4	Staddle	v	Esgaroth
Match 5	Bree	v	Hobbiton
Match 6	Tighfield	v	Bywater
Match 7	Crickhollow	v	Underharrow
Match 8	Rivendell	v	Little Delving

Second Round

Match 9	Overhill	v	Winner of Match 5
Match 10	Winner of Match 3	v	Isengard
Match 11	Stock	v	Winner of Match 1
Match 12	Edoras	v	Winner of Match 6
Match 13	Winner of Match 2	v	Frogmorton
Match 14	Tuckborough	v	Winner of Match 7
Match 15	Michel Delving	v	Winner of Match 4
Match 16	Winner of Match 8	v	Budgeford

Third Round

Match 17	Winner of Match 15	v	Winner of Match 12
Match 18	Winner of Match 11	v	Winner of Match 9
Match 19	Winner of Match 16	v	Winner of Match 13
Match 20	Winner of Match 10	v	Winner of Match 14

Semi-Finals

Match 21	Winner of Match 18	v	Winner of Match 20
Match 22	Winner of Match 19	v	Winner of Match 17

Final

Match 23	Winner of Match 22	v	Winner of Match 21

All matches (including the Final) are to be played at the home ground of the first-named team.

Which team faces the prospect of having to play five matches, all away from home, in order to win this year's Middle-earth Cup?

A Bywater

B Esgaroth

C Hobbiton

D Rushey

E Underharrow

32 Cynics would say that you can tell that a restaurant that claims to be one of the top five restaurants is in fact the fifth, otherwise it would call itself one of the top four, or whatever.

It's not so simple when there are three local schools that claim to be in the top 100 (in a list with no equal placements).

What is the greatest difference in the position in the list of the second and third of these local schools?

A 1

B 2

C 50

D 98

E 99

33 All vehicles with a large number of seats or capable of carrying heavy loads are required to have a device installed which records how fast they travel. A paper disc rotates very slowly, and the speed is marked, with zero in the centre and the maximum speed at the edge.

Last Monday I drove on a motorway; there were no hold-ups apart from an area where there was a speed restriction for some roadworks. Which of the following recordings would that have been?
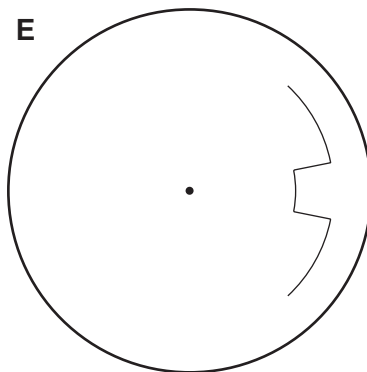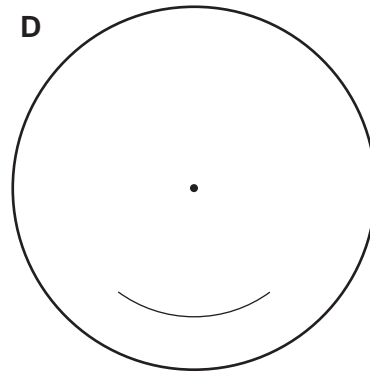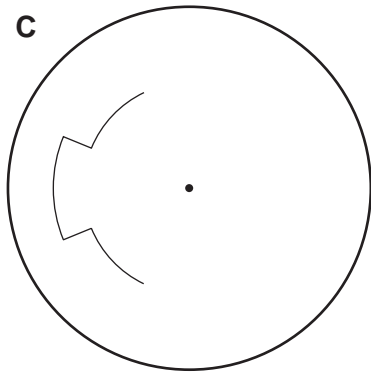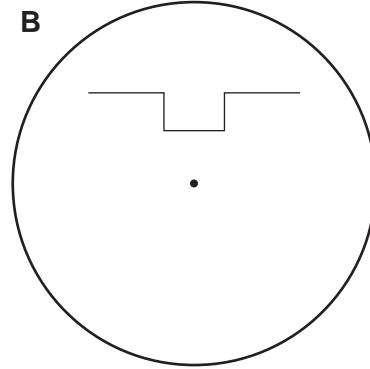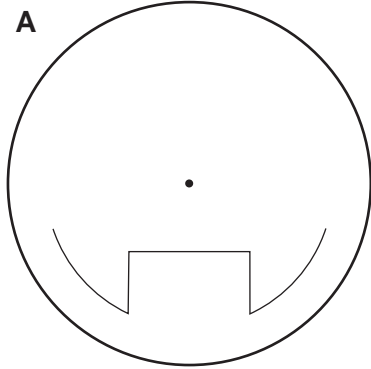
34 A question-master asks each of four contestants up to 15 questions. The process is repeated again for a second round. The 'score' is the number of questions answered correctly. The scores after each round are announced in **numerical** order. After the first round of a contest the scores were 8, 10, 11, and 14.

After the second round the total scores for the contestants were 13, 18, 20, and 24.

What was the largest possible score achieved in the second round of this contest?

A 10

B 11

C 14

D 15

E 16

35 Polly and Dolly have the same parents. Polly's son Wally is married to Dolly's daughter Molly. They have one daughter, Holly. Holly is constructing a family tree.

What is the largest possible number of great-great-grandparents that Holly will discover?

A 6

B 8

C 12

D 14

E 16

36 The best way to be happy is to adopt the Buddhist way of life. Neuroscientists can study the brain by means of scanning techniques, and such studies have shown that in general Buddhists have a high level of activity in a certain part of the brain, the left prefrontal lobe. Activity in this part of the brain indicates positive emotions and good mood. Thus those who have a high level of such activity are generally happier than others.

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

A It gives a misleading definition of happiness.

B It ignores evidence about people other than Buddhists.

C It assumes that happiness is caused by brain activity.

D It assumes that the Buddhist way of life is easy to adopt.

E It ignores the fact that people may say they are happy when they are not.

37 Helicobacter is a bacterium that can cause stomach ulcers, and can be treated with antibiotics. The bacterium can be passed from one person to another, for example from a parent to a child, by using the same cups or spoons that have not been thoroughly washed. Random tests have shown that many people are infected with helicobacter, without developing stomach ulcers or any other symptoms. Amongst people aged over 50 the percentage infected with helicobacter, but without symptoms, was found to be much higher than amongst those under 50. This could be because the older you are the more times you will have been exposed to the bacterium, or because _____

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

A   the older you are the more likely you are to suffer from stomach problems.

B   in general standards of hygiene have improved over the last 50 years.

C   children are particularly susceptible to bacterial infections.

D   a higher percentage of those tested were aged over 50.

E   helicobacter is becoming less resistant to antibiotics.

38 In many countries, telephone companies have a social and legal obligation to provide public telephones. These are for people to use if and when they need or want to make a phone call whilst away from home or work. However, the coming of the mobile phone has meant people use public telephones much less. A recent survey suggested that many public phones are used only once every few days. With young people, especially, the mobile phone is the main way that they keep in contact with parents and each other.

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

A   There is no longer any justification for the legal obligation to provide public phones.

B   Older people use public telephone boxes more than younger people.

C   The mobile phone is more convenient than the public phone.

D   The original policy on public telephone provision did not anticipate the mobile phone.

E   People with mobile phones have no use for public telephones.

39 In identifying the main conclusion of an argument, you should first check the last sentence of the argument, and if that is not a conclusion check the first sentence. The main conclusion of an argument usually comes at the end. It is easy for the writer to organise the facts so that they build up to the conclusion. However sometimes, for effect, a writer will state the main conclusion first, and then explain the steps to reach this. It is difficult to write an argument with the conclusion in the middle, because it can neither be fully anticipated by what has gone before nor fully explained by what follows.

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

A In identifying the main conclusion of an argument, you should first check the last sentence of the argument, and if that is not a conclusion check the first sentence.

B It is difficult to write an argument with the conclusion in the middle, because it can neither be fully anticipated by what has gone before nor fully explained by what follows.

C It is easy for the writer to organise the facts so that they build up to the conclusion.

D Sometimes, for effect, a writer will state the main conclusion first, and then explain the steps to reach this.

E The main conclusion of an argument usually comes at the end.

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

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

A The next supersonic passenger jet could arrive soon, following fierce competition between Japanese and American development groups. There is great support amongst passengers for quicker international flights, but many countries remain unhappy about the noise made by supersonic aircraft.

B An Australian company has produced the first truly blue rose by transferring genes from naturally blue flowers. The flower is being tried out in the US and Japan.

C Australia is likely to need nearly 90,000 extra scientists by the end of this decade. Australian universities are moving their resources away from science and engineering courses. There will probably be opportunities for non-Australian scientists.

D Bacteria from the leaves of a common sea lettuce can prevent the fouling caused by marine organisms on a ship's hull. This fouling slows ships down by increasing drag. The bacteria can be applied to the ship's hull in a sticky soup.

E Some people think that moral decisions are a matter of reason. Others think they can be settled by religious rules. A third group thinks that emotions play a significant role.

41 A young student, living in Wareham, wishes to spend a holiday week in Kendal. She has a budget of £50 to travel for the return journey. She will be travelling on Thursday September 12th, returning on Thursday September 19th. She does not wish to have more than 2 changes on either journey and she must reach the hotel by 20.00. On the return journey she wants to get home by 22.30.

A timetable of train times and the prices is shown below.

	Mon–Thurs only	– All Days –			
Depart Wareham	06.03	07.03	08.03	09.03	13.03
Changes	3	2	3	2	3
Arrive Kendal	17.58	19.06	21.05	22.10	23.00
Prices (£)	20	24	27	30	24

	Mon–Thurs only	– All Days –			
Depart Kendal	07.45	08.45	09.45	11.05	12.05
Changes	3	2	3	2	3
Arrive Wareham	17.06	18.20	20.00	22.06	23.00
Prices (£)	20	24	27	30	24

Which of the following represents the best outward and return journeys for the student to take?

A Depart Wareham 08.03, depart Kendal 11.05

B Depart Wareham 07.03, depart Kendal 11.05

C Depart Wareham 07.03, depart Kendal 08.45

D Depart Wareham 06.03, depart Kendal 07.45

E Depart Wareham 13.03, depart Kendal 08.45

42 An online bookshop sells books for whole numbers of dollars and has an added cost for postage and packing as follows:

$1 up to and including $100
$4 over $100 up to $1000
$4.75 over $1000 up to $2000

For $101 of books, it would be cheaper to buy in two parts, for example $50 and $51, and so pay $2 instead of $4 for postage and packing.

For what range or ranges of values is it cheaper to split an order into two or more parts?

A $50 - $200

B $100 - $400

C $101- $399

D $104 – $475

E $101 – $400 and $1001 – $1075

43 At the golf course where Lee works it costs $11 for most people to have a game of golf, but senior citizens only have to pay $9. Golfers who arrive early put the fee in an honesty box that Lee opens when he arrives at 9 am. This morning there was $124 in the box.

How many golfers playing early were senior citizens?

A 2

B 3

C 4

D 5

E 6

44 In order to make the base for a sculpture, a number of different materials are to be sandwiched together. There are five different materials, each of which is available in sections of a pre-determined thickness. The thicknesses of the different materials are not necessarily the same (but all the sections of glass, for instance, are the same thickness).

The table below shows how many slices of each material were used in five of the proposed bases. In the right hand column, the thickness of the proposed base is given in millimetres.

Number of pieces of oak	Number of pieces of pine	Number of pieces of aluminium	Number of pieces of glass	Number of pieces of plastic	TOTAL thickness (in mm)
3	4				36
	3	3	3		18
1				10	28
1	8				32
1	1	1	1	1	16

What is the thickness of **one** piece of pine?

A   1.0 mm

B   2.0 mm

C   2.5 mm

D   3.0 mm

E   4.0 mm

45 Apart from flights around North America, many scheduled airlines allow passengers up to 23 kg of luggage per person. Passengers travelling together can pool their allowances.

An individual passenger carrying more than the 23 kg must pay a surcharge.

Bags over 25 kg need to have a label attached warning that it is 'HEAVY'. The upper limit for a single bag is 32 kg.

A family has bags of 21, 24, 26 and 30 kg.

How many people must there be in the family group for the bags to be carried without further payment?

A   2

B   3

C   4

D   5

E   6

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