THINKING SKILLS   **8436/01**

Paper 1 Multiple Choice

November 2004

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 **50** 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.

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

This document consists of **28** printed pages and **4** blank pages.

IB04 11_8435_01/XRP
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          UNIVERSITY *of* CAMBRIDGE
          International Examinations
          [Turn over

1 In the not-so-distant past, doctors were regarded by their patients as all-knowing experts whose decisions went unquestioned. Therefore it made little difference whether or not the patient understood what the doctor was talking about. The patient's opinions and wishes were irrelevant and most patients accepted this. So doctors made little or no effort to speak to patients in plain language that ordinary people could follow. Today the situation is very different. Patients now have the right to be consulted and they know it. They are entitled to a clear explanation from their doctors about the different treatments available, so that they can make their own informed decisions. They cannot do this if they do not understand the language.

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

A   In the past doctors had little or no respect for patients' rights.

B   If doctors used plain language, patients would understand the different treatments available to them.

C   To help patients exercise their rights, doctors should use language that ordinary people can understand.

D   If doctors made the effort to give clear explanations, patients would be able to make the right decisions.

E   Using plain language would improve the relationship between doctors and their patients.

2 For many decades, humans have dreamed of exploring beyond the solar system to the distant planets and stars. The space technology for doing this has until recently been confined to the realm of science fiction. However, developments in science are now suggesting that such a technology is feasible in practice as well as in principle. Therefore, it is only a matter of time before humans realise their dream and are able to explore outer space.

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

A   The only obstacle to space exploration is inadequate space technology.

B   Space exploration is worthwhile and will solve many problems.

C   People would be willing to see governments financing space exploration.

D   Science will succeed in developing risk-free space exploration.

E   Science fiction has little basis in real science.

3 Many people foresee a decline in the popularity of classical music. This is because the average age of the audience for such music is about fifty five. Few young people are willing to go to classical music concerts or buy classical CDs. However, there is nothing new in this. Classical music has always appealed more to older age groups. Therefore there is no reason to think that classical music is becoming less popular just because of the age profile of its audience.

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

A There are no longer famous composers like Mozart working in classical music.

B The average age of the audience for classical music is rising steadily.

C The proportion of people over fifty five interested in classical music has declined steadily.

D Music colleges are still managing to recruit large numbers of new students.

E The proportion of classical music played on popular radio stations is very low.

4 Science documentaries like the BBC's 'Dinosaurs' have been a great success in the sense that they have drawn mass audiences. However, in trying to make science entertaining they have distorted and even mis-stated scientific facts. There is not much point in getting people interested in science if they end up with a false perception of what scientific knowledge reveals about the world. Therefore it is better if science is left to the classroom where it properly belongs.

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

A The interest created by such documentaries will not be sustained.

B Teachers do not distort scientific facts in order to be entertaining.

C Documentary makers are interested only in entertainment.

D Science cannot be both correct and entertaining.

E Scientific knowledge always gives a correct account of the world.

5 Tobacco companies loudly protest that their sponsorship of top-level sports does not cause anyone to start smoking and should not therefore be banned. But statistics show that among young men who are fans of motor racing there are twice as many smokers as there are among young men who have no interest in the sport. Since motor racing is heavily reliant on tobacco sponsorship, it is obvious that the two are connected. Motor racing is very glamorous and the drivers are natural role models for young males. So it stands to reason that if the cars they drive have the logos of well-known cigarette brands on the side, their impressionable fans will think it is stylish to smoke.

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

A Sponsorship of sport by cigarette companies does not cause people to smoke.

B Young men are more impressionable than other sectors of the population.

C Sponsorship by tobacco companies ought to be banned.

D There is a clear connection between smoking and tobacco sponsorship of motor racing.

E It stands to reason that young men who watch motor racing will be encouraged to smoke.

6   Terry wants to photocopy a newsletter for his local golf club. This will be printed on A4 paper, black and white, double sided and folded in half. The prices supplied by his local print shop are shown below.

		Black and white	**Colour**
Paper		1p per sheet	10p per sheet
Photocopying	1-24	5p per side	50p per side
	25-49	3p per side	30p per side
	50-99	2p per side	20p per side
	100+	1p per side	10p per side
Folding		0.5p per fold	0.5p per fold
(Reduced prices for longer runs apply to all copies)			

Which of the following graphs represents the total cost for Terry as a function of the run size?

A

B

C

D

E
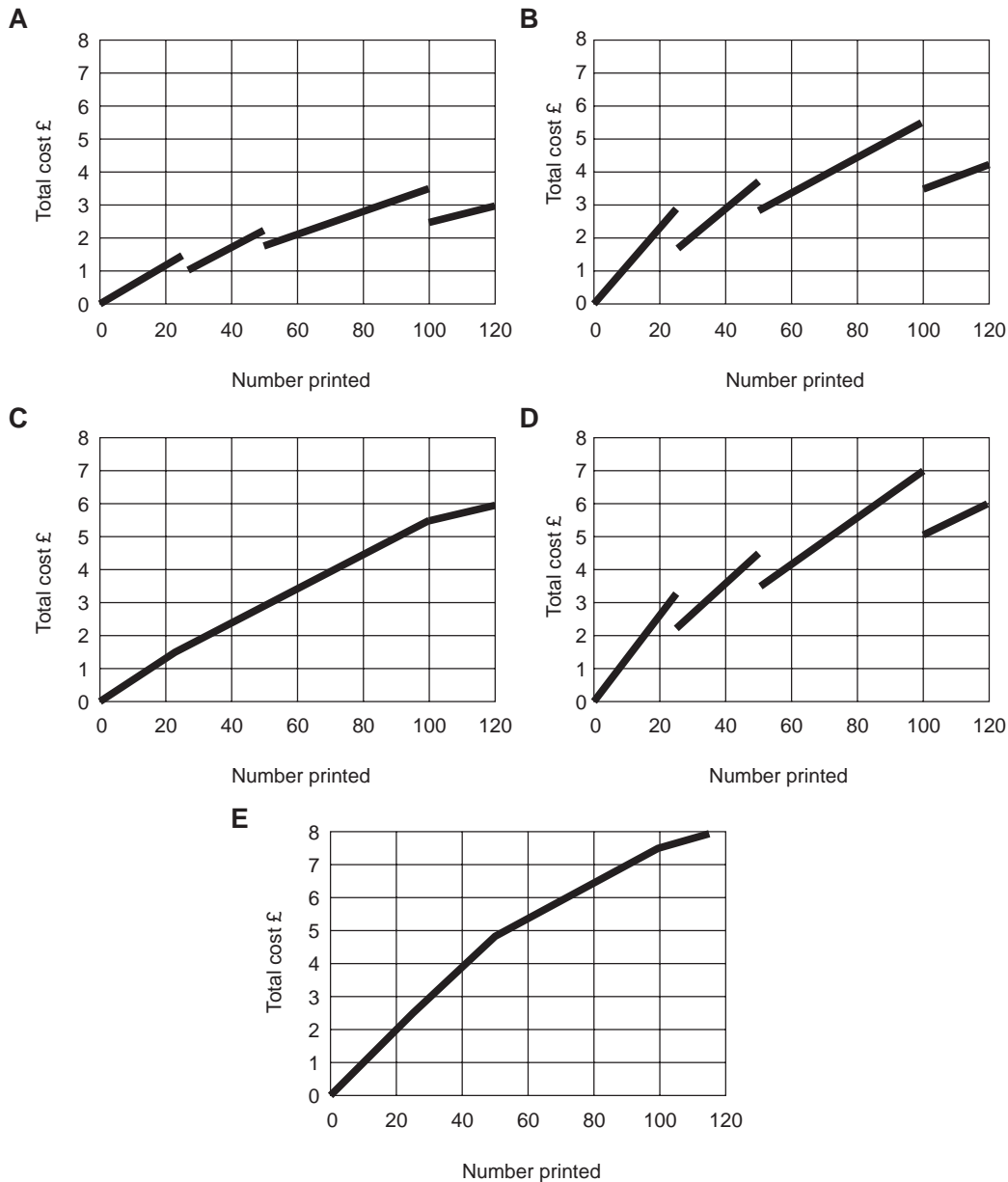
7 I sent some items of antique furniture to Chrisby's to be auctioned. Chrisby's estimate of what each item would sell for is shown below:

Mahogany Table	$600 - 750
Grandfather Clock	$1400 - 1600
Writing Cabinet	$400 - 500
Bookcase	$250 - 350

In the sale itself, the writing cabinet was a disappointment, selling for only $320, but the mahogany table sold for $700, the bookcase made $280, and the grandfather clock exceeded all expectations at $ 2200.

How much more did my furniture sell for altogether than Chrisby's **minimum** total estimate?

A $300

B $650

C $730

D $850

E $930

8 Bill works for GardenMart, selling furniture to garden centres. The graph below shows Bill's annual salary as a function of his sales.

Sales

Which of the following relationships would give a graph of the shape shown?

A Bill's salary is a fixed percentage of his sales.

B Bill's salary consists of a fixed amount plus a percentage of all his sales.

C Bill's salary is a fixed amount either reduced by a percentage of sales below his target sales or increased by the same percentage above his target.

D Bill's salary is a fixed amount for sales up to a target plus a percentage of his sales above his target.

E Bill's salary is a fixed amount plus a percentage of his sales which increases with the sales volume.

9 When Ahmed puts his debit card into the cash machine at his bank, one of the options available is to change his PIN. He likes to do this on a regular basis for security reasons and when he does, he always uses the following sequence of operations, based on his date of birth (11/7/72), to help him choose the new PIN:

First he writes down his current PIN with the digits reversed
and adds 11 to this number,
then he multiplies by 7,
and finally he adds 72.

He selects the last four digits of the final answer as his new PIN.

Ahmed's last change of PIN was from 5028 to 7584. What will his next choice be?

    A   3237

    B   3414

    C   4082

    D   4148

    E   4580

10 Clare has made up some salad dressing consisting of 2/3 oil and 1/3 vinegar. Sally prefers the dressing to be 1/2 oil and 1/2 vinegar. The container, which holds 120 ml, is full so she must remove some of Clare's mix and replace it with neat vinegar.

How much must she remove?

    A   10 ml

    B   20 ml

    C   30 ml

    D   40 ml

    E   60 ml

11 The male of a species of wildfowl called the ruddy duck is mating with the females of a similar duck in Spain, threatening the gradual extinction of the Spanish species. This is because the Spanish male ducks are not able to compete with the larger, more aggressive ruddy duck. The ruddy duck is not a native species of Europe, but was imported in the 19th century. Human interference in the animal world is always a bad thing. Therefore we should try to restore the natural balance of species by eliminating the ruddy duck.

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

A It generalises from the particular case of the ruddy duck to all species.

B The ruddy duck's elimination is not a sufficient condition for the survival of the Spanish species.

C The ruddy duck's elimination is not a necessary condition for the survival of the Spanish species.

D The ruddy duck's mating habits is not necessarily the cause of the decline of the Spanish species.

E The conclusion that the ruddy duck should be eliminated contradicts a key premise.

12 It is time to stop sending people on space flights. There are only three purposes for being in space - military, commercial and scientific. Neither the military uses of space (such as missile defence shields) nor the commercial uses (such as communications' satellites) require manned space flights. Astronauts can carry out scientific research in space, but the results of such research do not justify the expense. And nobody seriously believes now that humans are ever going to live on other planets.

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

A Manned space flights are not necessary.

B Manned space flights are too dangerous.

C Manned space flights should be discontinued.

D Manned space flights for scientific research are too expensive.

E Manned space flights will not help us to live on other planets.

13 Mr Ng, who missed a business meeting when his train was delayed for 6 hours, is claiming $2000 in compensation from the rail company. The rail company does not deny that the train was late, but they do deny that it was their fault. The delay was caused by an electrical fault which caused signal failure along a 50 km stretch of track. However the state law is clear: the company that sells the travel ticket is responsible for passengers' actual financial losses resulting from delays of 4 hours or more. The rail company sold Mr Ng his ticket; therefore they are legally obliged to meet his demand in full. Whether or not they then have a claim against the electricity supplier is a separate matter.

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

A Mr Ng incurred actual financial losses of $2000 as a result of the delay.

B There was no quicker way of getting to the meeting, such as flying.

C The electricity company cannot be held legally responsible for the signal failure.

D No compensation is paid to passengers for delays of less than 4 hours.

E There was no alternative route which would have avoided the affected stretch of track.

14 DVD is a method of showing pre-recorded films and recording/playing back TV programmes. It is gradually replacing videotape as a means of doing this. The quality of sound and vision is an important factor governing people's decisions about which of the different DVD systems on offer they choose. In the early days of videotape, a similar situation occurred, but a system called VHS beat all the competition and emerged as the dominant technology. It follows that the DVD system with the best sound and picture quality will emerge as the dominant technology of the present competition between different DVD systems.

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

A Video shops stocked far more films on VHS than rival systems.

B Video recorders using rival systems were far more expensive than those using VHS.

C The sound and vision quality of VHS recorded programmes was poorer than live TV.

D Some DVD systems do not allow one to record and play back TV programmes.

E The sound and vision quality in cinemas was far superior to that of VHS.

15 There has been a decline in the rate of many of the illnesses of old age. For example, arthritis, dementia, and strokes are all declining year by year. The causes of this decline include such medical advances as beta-blockers to control high blood pressure and the fitting of hip replacements. There is, however, another factor. The present generation of 60- and 70-year-olds had much better nutrition as children than did their parents. Good nutrition in childhood is important in laying the foundations of good health in adulthood. Since improvements in nutrition have continued over the past sixty years, we can expect that many of the illnesses of old age will continue to decline.

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

A We can expect that improvements in nutrition will continue.

B The rate of many of the illnesses of old age has declined.

C Medical advances have significantly reduced the rate of diseases of old age.

D The fall in the rate of many of the illnesses associated with old age will continue.

E Improvements in nutrition have been very important in maintaining good health in old age.

16 Jack and Jill are playing a game in which each turn involves throwing three dice (one coloured red, one coloured blue and one coloured green). The score for the turn is calculated according to this formula:

(number on red dice + number on blue dice) x (number on green dice – 1)

Jill has just taken her turn with the following result:

Blue die 2
Green die 5
Red die 6

What is Jill's score for this turn?

A 32

B 35

C 39

D 41

E 48

**17** The following table shows the progress of the Smith family travelling by car to their holiday accommodation.

Stage	Distance for Stage (km)	Time for Stage (min)
Home to A1	40	30
A1 to M25	80	40
M25 to M4	30	36
M4 to Services	30	15
Stop at Services	0	30
Services to A416	50	30
A416 to holiday home	20	15

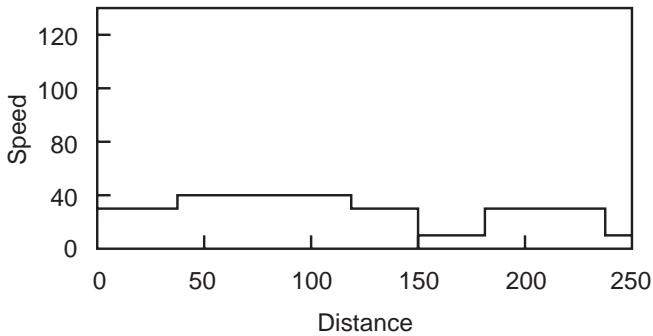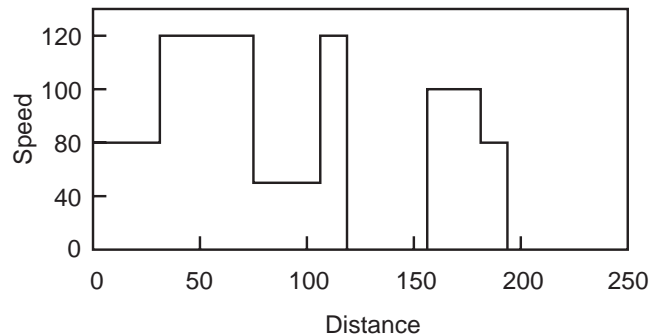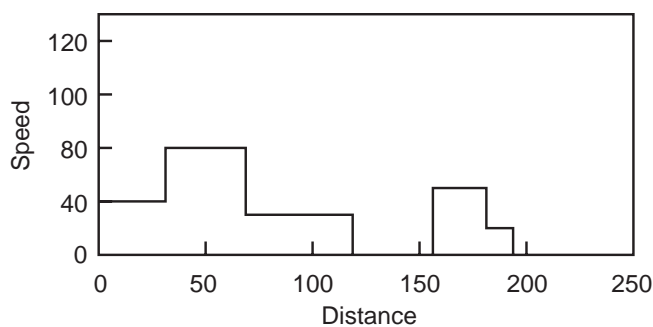Which of the following graphs represents their average speed for each stage of the journey?

A
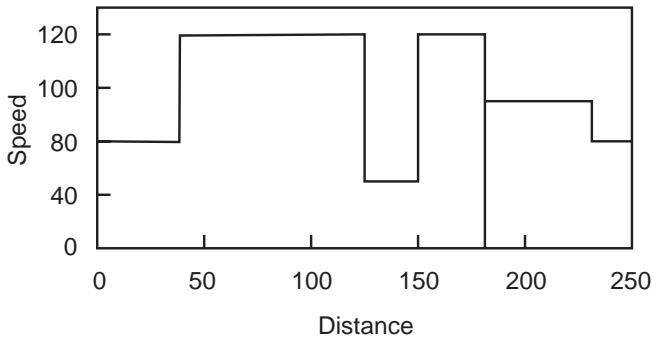
B
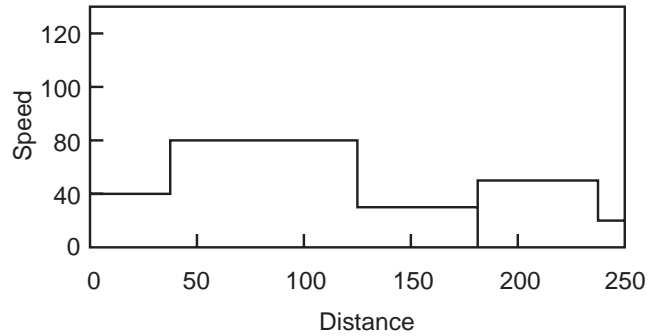
C

D

E

18 There is an old saying,

"*a hen and a half lays an egg and a half in a day and a half*".

If this is true, how many eggs will 2 hens lay in 3 weeks?

A 14

B 21

C 28

D 56

E 63

19 John is travelling from Carlton to Denby by train. The journey takes exactly 3 hours. Trains leave Carlton for Denby every hour on the hour. Trains leave Denby for Carlton every hour at 5 minutes to the hour. There are no other trains travelling on this line. John hasn't got his watch with him so he judges his progress by counting how many trains pass going in the opposite direction.

How many trains will his train have passed when he arrives at Denby?

A 3

B 4

C 5

D 6

E 7

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20 This is the price list at the Pizza Piazza.

All our Pizzas contain Mozzarella Cheese, Tomato and Oregano	10"	12"
1. **MARGHERITA** Mozzarella Cheese, Tomato and Oregano	$3.00	$5.00
2. **NAPOLI** Anchovies and Olives	$3.70	$5.80
3. **PICCANTE** Pepperoni and Onion	$3.70	$5.80
4. **ROMANA** Ham and Mushroom	$3.70	$5.80
5. **TONNO** Tuna and Onions	$3.70	$5.80
6. **POLLO** Chicken, Mushroom and Sweetcorn	$4.00	$5.80
7. **HAM & PEPPERONI** Ham and Double Pepperoni	$4.00	$5.80
8. **SEAFOOD** Tuna, Anchovies and Prawns	$4.00	$5.80
9. **HAWAIIAN** Ham, Pineapple and Sweetcorn	$4.00	$5.80
10. **DEL BOSCO** Mushroom, Chicken and Spicy Beef	$4.00	$5.80
11. **VEGETARIAN** Mushroom, Onions, Peppers, Pineapple & Sweetcorn	$5.50	$6.50
12. **HOT SHOT** Pepperoni, Spicy Chicken, Spicy Beef, Green Chillies and Chilli Powder	$5.50	$6.50
13. **BAY SPECIAL** Cheese, Tomato, Onion, Mushroom, Ham, Sweetcorn, Chicken & Pepperoni	$5.00	$7.50
CREATE YOUR OWN PIZZA (per topping)	$0.50	$0.70

Ask for Margherita (No. 1) and choose from any of the additional toppings:-
Spicy Chicken ● Ham ● Pepperoni ● Sweetcorn ● Mushroom ● Onion ● Green Pepper ● Pineapple ●
Olives ● Tuna ● Anchovies ● Prawns ● Spicy Beef

Leonardo has ordered a 12" Romana, a 10" Del Bosco and a 12" Margherita with Mushroom, Onion, Pepperoni and Spicy Beef toppings.

What is the cost of Leonardo's order?

A $12.70

B $15.50

C $16.80

D $17.60

E $19.40

21 The Government is proposing to allow 14-year-olds to spend half of their school year at work, if they want to. This is because many in this age group are seen as being uninterested in what the schools are teaching. But what about those children who have been getting on with their school work and attending regularly? These children will have to put up with their uninterested classmates being allowed to get frequent breaks from the discipline and demands of school work. The effect will be to create a lot of unrest in the children left behind, an unrest which will turn into a lack of interest in school work. The Government's proposal will have the opposite effect to that intended: it will turn more children off what schools have to offer.

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

A Many employers have expressed an interest in providing work placements for 14-year-olds.

B Children who are hard working at school are also likely to be hard working in employment.

C Some 14-year-olds want to spend more than half of their school year at work.

D Some 14-year-olds are uninterested in either school work or work placement schemes.

E Children who are uninterested in school work might be less so if they could spend part of their week working.

22 Advertisers have always assumed that television viewers watch adverts and that it is most effective to advertise during peak viewing hours in the early evening. It costs them much more to advertise during peak time. Recent research has shown that when the adverts come on, many viewers read, leave the room, switch to other channels, or talk to each other. The larger the group of people watching together, the more likely they are to talk, and therefore the less likely they are to watch the adverts. The research showed that later in the evening viewers become less likely to engage in these other activities, and are watching in smaller groups.

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

A Television advertising is the least effective method of persuading people to buy.

B People are unlikely to buy the products which are advertised on television.

C The money spent on peak time advertising could be used on more effective ways of promotion.

D Viewers who watch television in large groups concentrate less on the programmes.

E Television viewers may talk to each other at the same time as watching the adverts.

23 I am planning to fly to Kuala Lumpur (KL) tomorrow evening and would prefer a direct flight. Flight availability is shown by the following Venn diagram.

Direct Flights   Evening Flights   Key

(shaded)	No flights
X	Some flights
(blank)	No available information
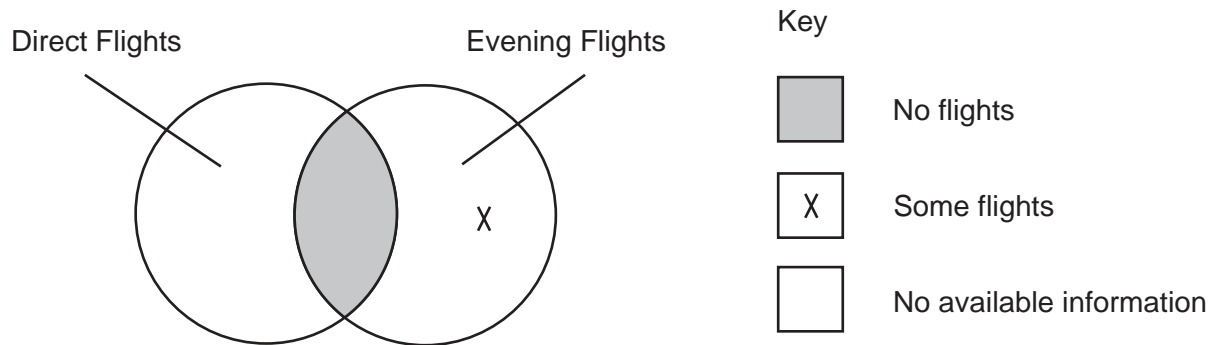
Which of the following is a **conclusion** that I can draw from the information in the diagram?

A   I can get a direct flight to KL in the evening.

B   I can get a direct flight to KL, but not in the evening.

C   I can get a flight to KL in the evening, but not a direct one.

D   I cannot fly direct to KL.

E   I cannot fly to KL in the evening.

24 In an increasingly complex world, it is important to recognise that a solution to key global problems is more likely if a global authority emerges. We should encourage any moves to establish global organisations that have supreme authority over nation states. The important decisions that need to be made about issues such as environmental protection and world trade cannot be left to the voluntary co-operation of nation states, because they will tend to follow their own self interest. Only an international authority is in a position to rise above the self interest of individual nation states.

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

A   Global forms of organisation are the best way to tackle all global problems.

B   The establishment of global organisations with supreme authority over nation states should be encouraged.

C   A solution to key global problems is more likely if a global authority emerges.

D   Nation states will eventually disappear as a feature of world political organisation.

E   Only an international authority can rise above individual nation state interests.

25 Throughout the world, rare native species of wild plants are being wiped out by environmental changes caused by global warming, pollution and intensive agriculture. However, some plants developed for and grown in gardens, such as laburnum, are spreading into the wild. Therefore, if the traditional pattern of flora in the wild is to be maintained, environmental groups need to take action. Native species need special protection and the spread of garden plants needs to be halted.

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

A   Garden plants are less sensitive to environmental changes than wild plants.

B   Environmental groups will be successful in restoring the traditional pattern of flora.

C   All garden plants are capable of thriving in the wild.

D   Halting the spread of garden plants will help create the conditions for wild plants to thrive.

E   No native species are capable of withstanding the effects of environmental change.

26 The graph below shows the average maximum daytime temperature and minimum night time temperature for the area of a nursery growing tender annual plants which may be killed by frost (i.e. if the temperature drops below $0^{o}C$).
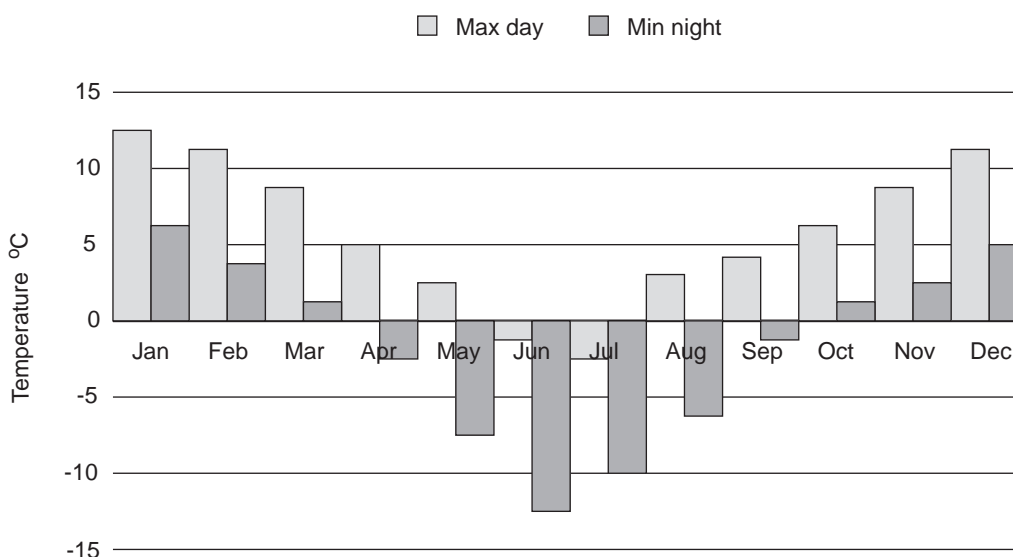
For what period of the year would they expect to be able to keep the plants outside both day and night?

A   April to September

B   June to July

C   August to May

D   September to May

E   October to March

27 Arthur is working out the average number of goals per match for his hockey team over a season. He finds that it comes to exactly 4 goals per match. Later he realises that he has only averaged the 12 League matches and that in fact the team scored 47 more goals in their Cup matches. When he includes these, he finds that the average per game is different but still a whole number.

How many cup matches did the team play?

A 5

B 7

C 10

D 12

E 19

28 Strokeball is a team sport. A match consists of four playing periods of 25 minutes each, with intervals of 10 minutes between periods. The Strokeball World Cup is currently being contested in Australia.

The semi-finals are to take place in Adelaide and Perth, and both matches were originally timetabled to start at 4pm local time, on September 5th (Adelaide is 1½ hours ahead of Perth). However, at the request of television companies who wish to broadcast the whole of both matches live, with a short interval in between, the authorities have decided to bring the start of the Adelaide match forward, so there will now be 30 minutes between the scheduled end of the Adelaide match and the start of the Perth match, which remains unchanged.

At what (local) time will the Adelaide match now start?

A 1.20 pm

B 1.50 pm

C 2.40 pm

D 2.50 pm

E 3.20 pm

29 When I am due to embark upon a long car journey, I use the following formula to help me decide how long I should allow myself to get to my destination:

$$\text{Time in minutes} = \left(\begin{array}{c}\text{number of}\\\text{kilometres}\\\text{on motorways}\end{array} \times 0.6\right) + \left(\begin{array}{c}\text{number of}\\\text{kilometres}\\\text{on other roads}\end{array}\right) + \left(\begin{array}{c}\text{30 minutes for}\\\text{every complete}\\\text{200 kilometres of journey}\end{array}\right)$$

I then round up the answer to the nearest multiple of ½ hour.

How long should I allow for a journey of 385 kilometres which includes 250 kilometres of motorway driving?

A 4 hours

B 5 hours

C 5 ½ hours

D 6 hours

E 6 ½ hours

30 A survey in a city shows the proportions of the population travelling to work by various means of transport. The results were reported separately for men and women and are summarised in the bar chart below. "None" applies to people who work at home or do not work. It may be assumed that the proportions of men and women in the population are equal.
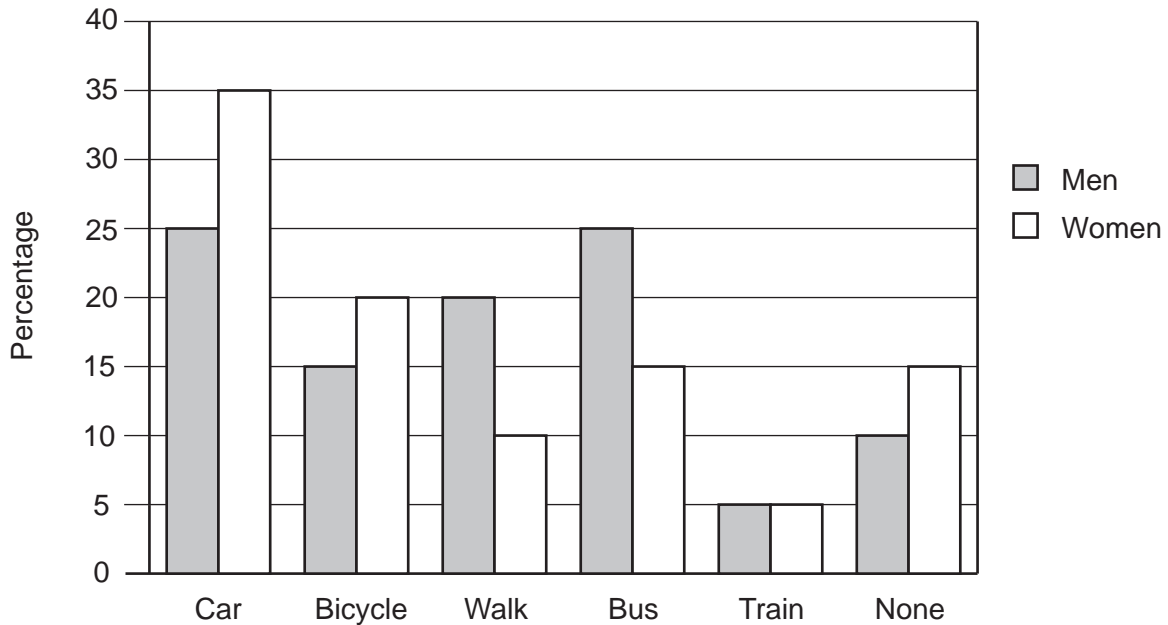
What percentage of people use public transport (bus or train)?

A 5%

B 12.5%

C 20%

D 25%

E 30%

31 Bright outdoor lighting at petrol stations and supermarkets does not make customers feel safer from criminals such as muggers and car thieves. This is because the lights are often so bright that they dazzle, making it harder for people to see when they go back into less well lit areas, and creating dark shadows where muggers could hide. Humans can see quite well at night without bright artificial light, so this bright lighting serves no useful purpose, in addition to making people feel less safe. It should therefore be discouraged.

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

A Bright lighting can have adverse effects on wildlife.

B Fewer crimes are committed in brightly lit areas.

C Mugging is the most common crime in many cities.

D Most people take precautions against crime, wherever they are.

E Surveys show that people do not think that the most brightly lit places are the safest.

32 The graphs below show a comparison of economic performance with a government's standing in the opinion polls during their first four years of office:
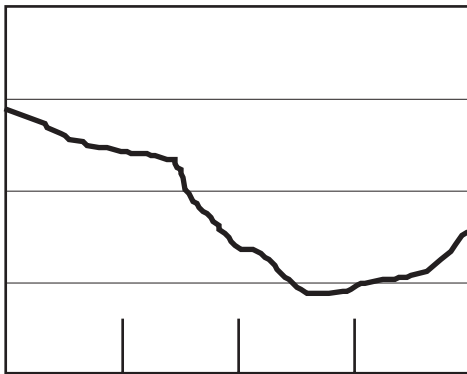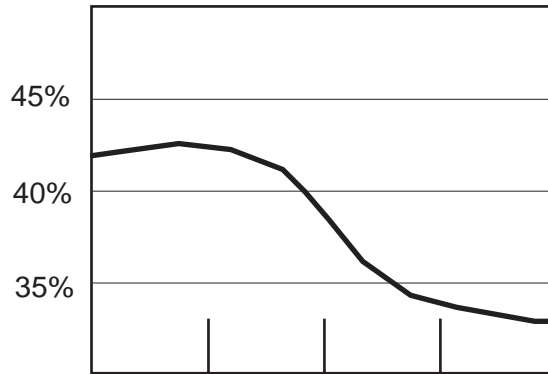
Economic performance

Government popularity (% share in the polls)

Which of the following is a **conclusion** that can reliably be drawn from the data?

A The voting public evidently hold the government responsible for the poor economic performance.

B The steep decline in government popularity has been slowed down by a recent improvement in the economy.

C The recent upturn in the economy has not been enough to prevent the continuing fall in government popularity.

D The government will not begin to regain its popularity until there has been a sustained improvement in the economy.

E A government's popularity in the polls has little or nothing to do with economic factors.

33 When a football team plays at their home ground, they are more likely to win. The usual explanations include the home team being used to the pitch or that travelling unsettles the opposing team. The real reason why, in football, home teams always have an advantage is that referees are influenced by the noise from the big home crowd to make decisions in favour of the home team. In an experiment, referees were asked to make judgements from video recordings of matches. One group was played using recordings without sound, the other with. The first group was much less likely than the second to give decisions in favour of the home team. The second group's decisions were close to those given by the referee in the match.

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

A Very weak football teams are rarely successful when playing away from home.

B The most successful football clubs normally have disputed decisions made in their favour.

C Clubs which have very few supporters perform better at home than away.

D All football referees have to be trained in understanding the rules of the game.

E In some sports, such as golf, players on their home ground have no advantage.

34 I have paid Coconut Tours 50 dollars to visit a tropical rain forest. When I go to a tropical rain forest, I expect to see snakes, lizards and large spiders. I am told that the region the tour is planned for does not have any of these creatures. Therefore this is not a tropical rain forest and so I am entitled to my money back.

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

A The presence of these creatures is not established as a defining feature of rain forest.

B The possibility of seeing these creatures is confused with actually seeing them.

C All tropical rain forests have snakes, lizards and large spiders in them.

D The author fails to consider other features of a tropical rain forest.

E The author wrongly assumes everybody wants to see these creatures.

35 Bottled water is very expensive. It is estimated that a family of four could spend £3.00 a day on bottled water during the summer months, especially if they bought the more expensive brands. In addition, a number of surveys have suggested that there are more impurities and harmful bacteria in many brands of bottled water than there are in plain tap water. It is obviously sensible not to buy bottled water and to use tap water instead. If one has a preference for 'sparkling' water, there are a number of products one can buy which will add some 'fizz' to ordinary tap water.

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

A It is not necessary to buy bottled water if one wants to drink sparkling water.

B It makes sense to use tap water rather than buying bottled water.

C Many bottled waters contain impurities not found in tap water.

D Bottled water is over-priced in comparison with other products.

E Tap water tastes just as good as bottled water.

36

MARVIN'S MUSIC STORE

All CDs
$5 each
or 3 for $12

Which of these bar charts shows how the average price of CDs at Marvin's Music Store depends upon how many you buy?

A

B

C

D

E
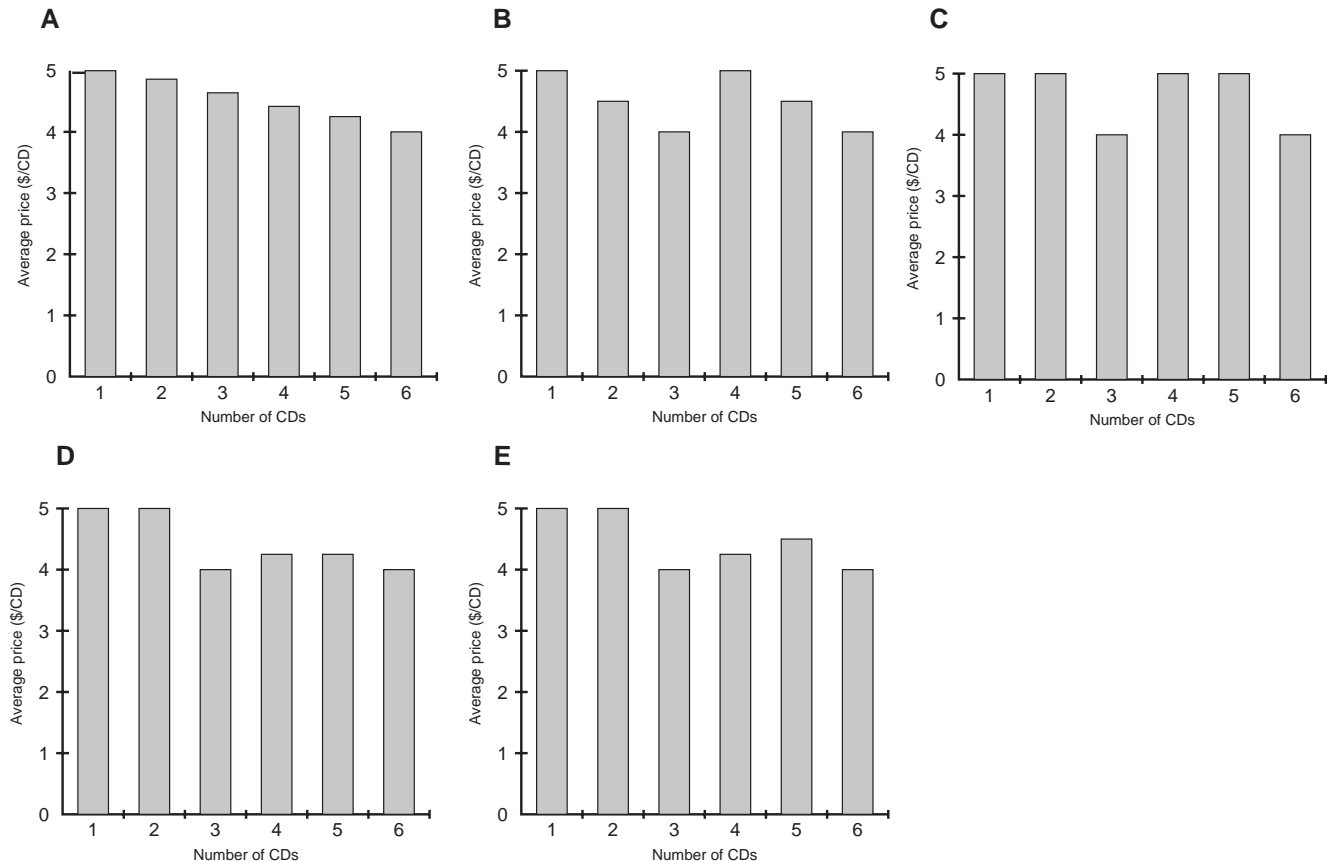
37 The players of Liverton football team are given a bonus for every match they win. The size of each bonus is based on the number of goals they score and concede.

Last week they received $170 following their 3-1 win against North Ham, and this week they will get $270 for beating Oldcastle 5-2.

Which of these formulae is used to calculate the Liverton players' bonus when they win a match?

A   (goals scored x $60) – (goals conceded x $10)

B   (goals scored x $65) – (goals conceded x $25)

C   (goals scored x $70) – (goals conceded x $40)

D   (goals scored x $75) – (goals conceded x $55)

E   (goals scored x $80) – (goals conceded x $70)

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38 Edwin and Ellie work together as plumbers. They charge their customers for materials plus an hourly rate for their work. Both charge the same labour rate of $20 per hour. On one particular job, Edwin buys all the materials for a total of $560. Edwin works two hours longer than Ellie on the job. The customer pays $2080 to Ellie for the work.

How much does Ellie owe Edwin?

A $560

B $740

C $780

D $1300

E $1340

39 Ahmed sells pies and pasties to fans at his local football club's matches. He knows from experience that, on average, 20% of the fans buy just a pie and 15% of them buy just a pasty. Only 5% of fans buy one of each. He always has 10% more in stock than he expects to sell to allow for variations. A match with a local team is coming up and a crowd of 6000 is expected.

How many pies should he have in stock for the match?

A 990

B 1320

C 1500

D 1650

E 2100

40 The TV talent show Starmaker produces a winner each week by means of a voting system that involves a panel of experts, the studio audience and a viewers' phone-in.

Each contestant's score is calculated according to the following formula:

(experts' votes multiplied by 10) + (audience votes divided by 2) +
(viewers' votes divided by 10 000, ignoring any remainder)

Last week's winner, Florence, received 2 votes from the experts, 56 votes from the studio audience, and 238 377 viewers voted for her.

What was Florence's winning score?

A 71

B 155

C 251

D 276

E 370

41 There are background levels of asbestos and other mineral fibres in the outdoor environment, which people are exposed to every day without seeming to worry. It is only when asbestos is discovered in homes and public buildings that people get excited about it and insist on its removal. This reaction is inconsistent. The levels of exposure to asbestos inside a building are no greater than the background levels, provided that the asbestos material is in good condition and is left where it is.

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

A In the past, asbestos was frequently used as a building material.

B The general public are unaware of their exposure to background levels of asbestos.

C It is when you start cutting or moving asbestos that it becomes a serious health hazard.

D There is a serious risk to health if asbestos is found to be in bad condition.

E The dangers of using asbestos as a building material have been exaggerated.

42 The diagram below represents information about pupils in a school in which Chinese is taught. The area in the **circle** on the left represents all those pupils who learn Chinese. The area in the **circle** on the right represents all those pupils who have visited China.

Pupils who learn Chinese   Pupils who have visited China
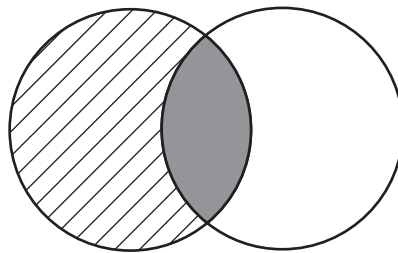
Key to the areas
within the circles

No information given

One or more pupils

No pupils (empty)

Which one of the following can be drawn as a **conclusion** from the information in the diagram?

A No pupils have visited China.

B Some pupils do not learn Chinese.

C All the pupils who have visited China learn Chinese.

D All the pupils who learn Chinese have visited China.

E Some pupils who have not visited China learn Chinese.

43 There has been a sudden steep decline in the numbers of vultures in India. Vultures keep the towns and villages clean by consuming the carcasses of cows, which are left where they die, because in India cows are sacred. If the carcasses are not consumed, serious diseases such as anthrax will increase in the human population. In some places, the decline of vultures has led to an increase in the numbers of wild dogs, which also feed on the carcasses of cows. These dogs are carriers of diseases like rabies, and the increase in their numbers dramatically increases the risk to humans of catching rabies.

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

A The decline in the numbers of vultures in India is caused by disease.

B The decline of vultures increases the risk of disease amongst people in India.

C The incidence of rabies is not likely to increase in the human population of India.

D The sudden steep decline in the numbers of vultures in India could be reversed.

E The increase in the numbers of wild dogs in India will reduce the risk of disease for humans.

44 When an animal is frightened or distressed it produces high levels of adrenalin in its bloodstream. Some horse racing involves making horses jump over high fences. Tests on such racehorses after they have been racing show that they have very high levels of adrenalin. This proves that horses find racing a frightening and stressful activity. On animal welfare grounds, we should therefore strive to get this sport banned.

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

A If horses lose their riders they continue to race along the racecourse.

B High levels of adrenalin are found in horses after they have been ridden normally.

C Horses in the wild avoid jumping fences unless they are in danger.

D Racing is an unnecessary activity and is not an important contributor to the economy.

E The Royal College of Veterinary Surgeons has no objections to horse racing.

45 Burning coal, gas and oil to meet the energy needs of homes and of industry produces carbon dioxide, which causes global warming, thereby seriously damaging the environment. So we should welcome the decision of some industrialised countries to reduce carbon dioxide emissions by investing in renewable sources of energy, such as wind power and wave power. But since these countries do little to try to reduce the use of cars, these new 'green' energy policies are inadequate in dealing with the problem of carbon dioxide emissions.

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

A   Non-renewable energy sources such as coal, oil and gas will soon be used up.

B   It would not be possible to reduce the use of cars in industrialised countries.

C   The use of cars in industrialised countries produces significant amounts of carbon dioxide.

D   The use of renewable energy sources can reverse the damage caused by global warming.

E   Non-industrialised countries do not need to reduce their emissions of carbon dioxide.

46 The Get-U-There taxi company uses the following formula for charging passengers:

$3 (minimum charge) for the first 4 kilometres of a journey, then 50 cents for each further kilometre or part of a kilometre.

How much does a 20 kilometre journey in a Get-U-There taxi cost?
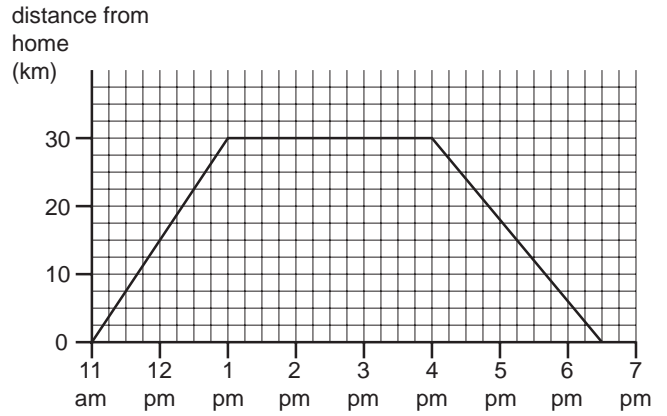
A $7

B $10

C $11

D $13

E $15

47 Sanjay's aunt lives 30 kilometres away. Yesterday he set off at 11 am on his bicycle to visit her. On the outward journey his average speed was 15 kilometres per hour, and on the way home he averaged 12 kilometres per hour.

Which of the following graphs could **not** represent Sanjay's progress during the day?
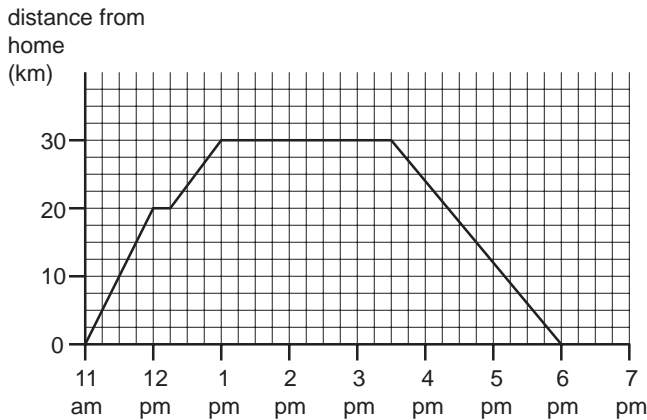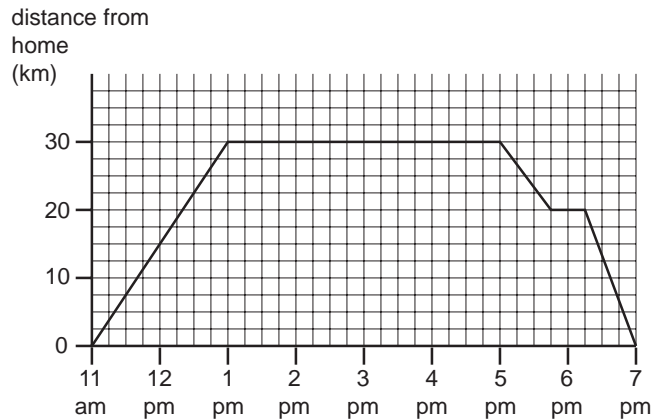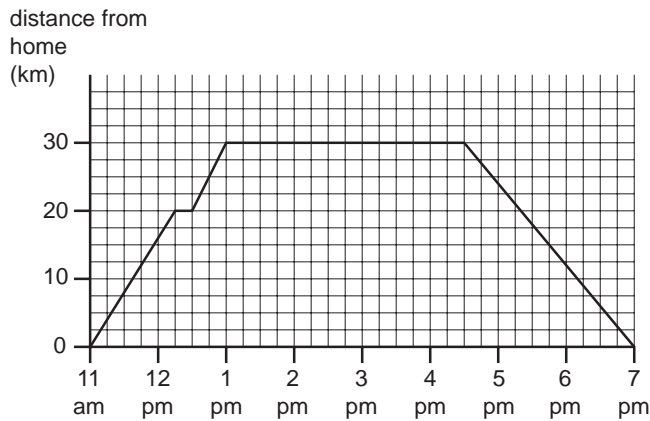
A
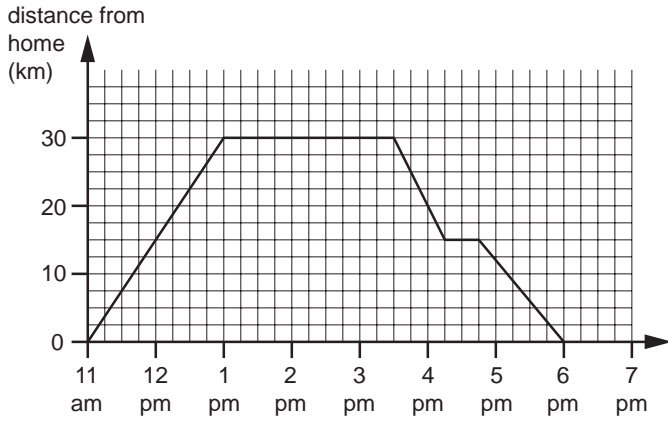
B

C

D

E

48 Part of the bus timetable for journeys between Abbotsbury and Brenton is shown below.

Abbotsbury (dep)	Brenton (arr)
6.55 am	7.40 am
7.05 am	7.55 am
7.20 am	8.05 am
7.35 am	8.25 am
8.00 am	8.45 am

Carol lives in Abbotsbury and works in Brenton. It takes her 20 minutes to walk from home to the bus stop in Abbotsbury and 15 minutes to walk from the bus stop in Brenton to her place of work. She works from 8.30 am to 5.15 pm.

What is the latest time she can leave her house in the morning to arrive at work on time?

A   7.00 am

B   7.05 am

C   7.15 am

D   7.20 am

E   7.40 am

49 George is making his will. He has a collection of 50 silver boxes. He intends to leave 6 boxes to each of his children and 5 boxes to each of his grandchildren. This will make up the 50 exactly.

How many children does he have?

A   4

B   5

C   6

D   8

E   9

50 A teacher in a primary school is dividing her class of 28 pupils into groups for art activities. She lines them up and, starting from the first pupil, selects every 5th pupil in the line (i.e. the 5th, 10th, 15th pupil, and so on) to do drawing. After sending these pupils away to get started, she then counts every fourth pupil of those remaining to do collage. She then counts every third of the remainder to do modelling with clay. Those left will do painting.

How many will do painting?

A   7

B   10

C   12

D   14

E   16

29

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31

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