



Thinking Skills Assessment Section 1

D512/11

November 2020

1 hour 30 minutes

Thinking Skills Assessment

INSTRUCTIONS TO CANDIDATES

Please read this page carefully, but do not open the 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
- 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 marks for correct answers, so you should attempt **all** 50 questions. Each question is 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.

You **must** complete the answer sheet within the time limit.

You can use the question paper for rough working or notes, but **no extra paper** is allowed.

Calculators are NOT permitted.

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 The 21st century is witnessing a significant rise in the proportion of people being diagnosed by medical professionals as having a mental illness. For example, at the turn of the century, the number of Canadians being treated for depression increased by over 30% in just one year. A recent study in the US found that nearly twice the number of young people there were diagnosed with a mental disorder in 2018 as compared to 2003. The World Health Organization estimates that by 2028, depression will be the second leading type of disability worldwide. It is clear that aspects of the modern world make it more difficult for people to maintain good mental health.

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

- A Changes in health care and a decrease in stigma attached to mental illness may be responsible for higher diagnosis rates.
  - B Many people with a mental health diagnosis may be able to function well in society.
  - C Significant numbers of people may be hesitant to seek help for mental health concerns from doctors or other medical professionals.
  - D Some physical and behavioural factors may make mental health diagnoses more difficult.
  - E In some cultures people may prefer to seek help for mental health concerns from religious leaders as opposed to doctors.
- 2 In the game of tigball, two teams compete against each other to try to score points.

Points are scored as follows:

A 'penalty' scores 5 points.

A 'tigdown' scores 8 points.

A 'transformation' scores 3 points, but teams only have the opportunity to achieve a transformation after scoring a tigdown.

There are no other ways of scoring points.

Which of the following is the only one that is a possible scoreline in the game of tigball?

- A 9–23
- B 11–21
- C 12–20
- D 13–14
- E 15–17

- 3** In the UK we are increasingly engrossed by entertainment: we devote more time to it than sleep and spend more money on it than food and drink. The aim of entertainment is to create a make-believe situation in which emotions can be excited and discharged without affecting real life. While entertainment has its proper place, it can become a preoccupation, dominating our thoughts and sapping our emotional energy. When this happens, the 'real' world of action starts to appear comparatively dull and tedious and this, in turn, undermines social cohesion. Our increasing use of entertainment is, then, threatening our wellbeing.

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

- A** Our wellbeing depends on social cohesion.
- B** People prefer entertainment to food and drink.
- C** Viewers copy the behaviour they see in entertainment media.
- D** Emotions pose a threat to society.
- E** The general public are addicted to entertainment.

- 4** Adults over the age of 60 are often depicted by the media as depressed, lonely and grumpy. Of course, old age is associated with physical decline, health issues become more common and memory gets fuzzier. Previously, theories of ageing assumed that emotional experiences would follow a similar pathway towards dysfunction. They were wrong. Recent research has shown that in old age negative emotions (like anger) wane, while positive emotions (like contentment) become more common. Why? Our lives undergo pronounced changes in later life. Work demands are eliminated, there is more time for leisure pursuits, and older people structure their environments in ways that reduce unnecessary stress. Time horizons shrink: people learn to spend their remaining precious time on the things that matter most.

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

- A** Not everyone experiences the negative physical decline in old age often depicted in the media.
- B** In old age people experience both positive and negative emotions less strongly.
- C** Being freed from the demands of work allows retired people to feel happier.
- D** Older people find better ways of avoiding stress and using their time productively.
- E** Assumptions that the emotional aspects of ageing mirror the physical aspects were wrong.

- 5** You are allowed to vote in the general election only if you are at least 18 years old. You have reached 18 so you will be able to vote in the forthcoming election.

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

- A** You cannot obtain foreign currency from this bank if you cannot produce acceptable identification. You cannot produce the required identification, therefore we cannot let you have the foreign currency.
  - B** You can visit your grandmother in hospital providing you have no illness yourself. As you have no illness, you will be able to visit your grandmother.
  - C** We can afford to go to America this year only if you save up sufficient money. You haven't saved enough so we will not be able to go.
  - D** To win the jackpot prize in the national lottery you need a ticket with all six prize-winning numbers. When I heard you had won the jackpot, I knew you had the lucky ticket that matched all the numbers from the draw.
  - E** Passport applications can only be accepted if photographs are witnessed as a likeness by someone in a professional job. Your application was refused so your witness cannot have been a professional person.
- 6** A teacher is organising a trip to the local zoo for 20 students. Of the 20 students, 12 are aged 11–15 and 8 are 16–18 years of age. Tickets cost £12.95 per adult (16 years of age and over) and £9.95 per child (2–15 years of age). For every 4 students under 16 they must have one teacher supervising them. They will take the minimum number of teachers.

What was the total admissions price for the group?

- A** £199.00
- B** £223.00
- C** £259.00
- D** £261.85
- E** £287.75

- 7 The Pentarathon Challenge is a competition in which five athletes compete against each other in five marathon races, run on consecutive days.

Points are awarded in each race, as follows:

first place 7 points

second place 5 points

third place 3 points

fourth place 2 points

fifth place 1 point

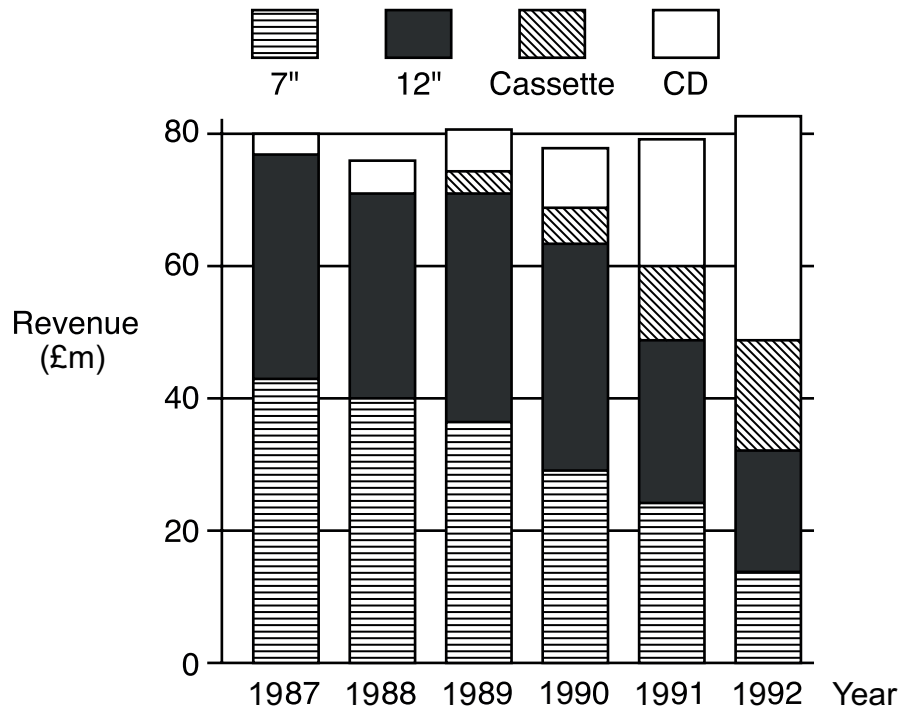
This table shows the total points of the competitors in this year's Pentarathon Challenge after each race.

<i>name</i>	<i>total points after race 1</i>	<i>total points after race 2</i>	<i>total points after race 3</i>	<i>total points after race 4</i>	<i>total points after race 5</i>
Colin	7	9	10	12	17
Jason	1	4	6	13	14
Kyle	3	10	15	18	25
Noel	2	7	14	15	18
Ray	5	6	9	14	16

Who finished in a different position in each of the five races?

- A Colin
- B Jason
- C Kyle
- D Noel
- E Ray

- 8 Between 1987 and 1992 there were four formats of singles recordings: 7", 12", cassette and CD. The accompanying graph shows how total sales of singles were split between the four different formats in the years 1987 to 1992.



Which one of the following statements is false?

- A The revenue from sales of CD singles grew every year.
- B The revenue from sales of 7" singles fell every year.
- C The revenue from sales of 12" singles fell every year.
- D Sales of 7", 12" and cassette singles accounted for approximately 60% of the revenue from singles in 1992.
- E 1989 is the first year of those shown in which 7" singles accounted for less than half the revenue from singles.

- 9** Microscopic malaria parasites enter a person's bloodstream through mosquito bites and infect red blood cells. They replicate in these cells and penetrate other organs. Until recently, microbiologists sought to block the parasites from entering red blood cells. Rhode Island University studied 700 Tanzanian children infected with malaria and found the parasites use a protein, since named PfSEA-1, to escape from the red blood cells they infect. Having investigated a subgroup of children immune to malaria, the researchers realised these children were producing an antibody that locked protein PfSEA-1 into their red blood cells. Trapped in the red cells, the parasites were destroyed by immune system cells. Scientists have reproduced the antibody and successfully tested it on mice. Experts believe that, after trials, the antibody will be certified for use in the treatment of humans.

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

- A** Rhode Island University is a world leader in medical research.
  - B** After the discovery of protein PfSEA-1, the traditional approaches to fight malaria will be abandoned as ineffective.
  - C** The discovery of protein PfSEA-1 is likely to help scientists to develop a new way of combatting malaria.
  - D** World leaders should support and fund the research being conducted by Rhode Island University.
  - E** A unique feature of the Tanzanian children helped in the discovery of protein PfSEA-1 and its function in spreading malaria.
- 10** Despite the government's promise to be more business friendly, plans have been announced to change the law regarding the paid leave that couples are entitled to take following the birth of a child. This will allow new parents to take more time off work than under the current regulations. It is claimed that the current legislation makes it difficult for those with family commitments to manage all of their responsibilities, but it needs to be recognised that businesses (and in particular small businesses) need to operate in a way that guarantees that staff are available to do the jobs that need doing. The new proposals are undoubtedly going to make the system more complicated and could dissuade businesses from employing certain groups of people. They should be opposed.

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

- A** The example given is only one of a range of measures being proposed.
- B** Many businesses now allow their employees to choose to work from home.
- C** The proposals from the government provide support for businesses to help with the cost of covering the work of staff taking leave.
- D** The problems associated with covering the work of absent members of staff become increasingly difficult the longer the absence goes on.
- E** The proposals will increase the amount of leave that employees are allowed to take in other circumstances as well as following the birth of a child.

- 11** As long as there is the right combination of guests, any party will be a success. The last party was great, so there must have been a perfect selection of guests.

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

- A** As long as there is a high level of unemployment, all economies will perform below their maximum potential. Unemployment levels here have risen sharply, so our economy will perform less well than it could do.
  - B** As long as there are good hotels, any seaside town can get on the tourist trail. Our town is a tourist hotspot, yet none of the hotels are any good.
  - C** As long as there is somebody in charge, any project will go smoothly. James has taken firm control, so this week's project will be fine.
  - D** As long as there are lots of security personnel around, public order is sure to be maintained. We have been having huge problems with public disorder here, so there cannot be many security people.
  - E** As long as there is lots of water, any habitat will support life. Life is abundant in that habitat, so there must be lots of water.
- 12** A builder has 32 kg of a mix of sand and cement, of which 25% is sand. For a new job, he needs 120 kg of a mix of sand and cement in which the ratio of sand to cement is 2 : 1. To obtain this, he starts with his initial 32 kg mix and adds more sand and cement.

What is the ratio of the masses of sand and cement that he needs to add?

- A** 4 : 7
- B** 3 : 4
- C** 5 : 3
- D** 9 : 2
- E** 12 : 1

- 13 I am planning to buy a new laptop. The following table shows the specifications and the prices of my shortlist.

<i>laptop</i>	<i>processor speed (GHz)</i>	<i>memory (GB)</i>	<i>storage (GB)</i>	<i>graphics card memory (GB)</i>	<i>screen size (inches)</i>	<i>price (£)</i>
<i>Racer</i>	2.7	4	500	2	15.6	600
<i>Ledd</i>	2.8	8	1000	4	17.3	850
<i>SNSV</i>	2.5	4	750	6	15.6	500
<i>Pear</i>	2.8	8	1000	4	13.3	1300
<i>Elovon</i>	3.0	16	1000	8	15.6	700

In terms of storage, the operating system and my files take up 300 GB. I would also like a laptop with a screen size of at least 15 inches. I am looking for the cheapest laptop that can run the following games (the minimum system requirements indicate the lowest possible value for each characteristic that would enable me to play these games):

MINIMUM SYSTEM REQUIREMENTS OF GAMES				
<i>game</i>	<i>processor speed (GHz)</i>	<i>memory (GB)</i>	<i>storage (GB)</i>	<i>graphics card memory (GB)</i>
<i>OTAD</i>	2.7	6	70	4
<i>Kickman</i>	2.5	4	80	4
<i>Earthcraft</i>	2.2	4	50	2
<i>Near Scream</i>	2.6	8	100	4

Which laptop should I buy?

- A Racer
- B Ledd
- C SNSV
- D Pear
- E Elovon

- 14** A combination lock has three dials, each dial has eight letters. It is known that the following combinations have been used - one, who, two, bob, add, owl, fab, den, mia and tat.

Which one of the following words is not possible to use on this combination lock?

- A** win
- B** deb
- C** hat
- D** men
- E** bad

- 15** Although the Scottish Government has announced plans to ban corporal punishment of children (smacking), we must preserve the right of parents in the rest of the UK to smack their children when it is reasonable. This is not because we are violent people eager to hit our kids: we recognise that smacking is damaging to children. The point is rather that people resent being legislatively compelled to do what they would have done anyway. It only breeds contempt for the law and since the wellbeing of citizens depends on people respecting the law, we should take steps to prevent it falling into disrepute. We must, therefore, protect the rights of parents in Northern Ireland, Wales and England to smack their children.

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

- A** No published study has identified any developmental benefits associated with smacking.
- B** Respect for the law is the decisive factor that underpins social cohesion in the UK.
- C** The ban is one element in a larger mental and physical health programme for children being undertaken by the Scottish Government.
- D** The damage caused by smacking far exceeds the damage caused by negative attitudes towards the law.
- E** Popular opinion can, in some cases, be an effective constraint on immoral behaviour.

- 16** Sometimes we are mistreated by others, and forgiveness is one kind of response to those who wrong us. However, sometimes we do things that appear to be morally wrong but, in fact, are not. If we are reproached, we can give an explanation for our action that justifies it. In these cases, we are claiming that, despite appearances to the contrary, what we did was morally permissible. Forgiveness and justification ought to be distinguished. When conduct is justified, the implication is that it was not morally wrong, but when conduct is forgiven, there is no such implication. What we are forgiven for is the morally wrong things we do.

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

- A** Sometimes we do things that appear to be morally wrong but, in fact, are not.
  - B** Forgiveness and justification ought to be distinguished.
  - C** What we are forgiven for is the morally wrong things we do.
  - D** Forgiveness is one kind of response to those who wrong us.
  - E** When conduct is justified, the implication is that it was not morally wrong.
- 17** There has been a choral singing boom. Three hundred thousand more people sing in choirs than play amateur football, yet football receives £30 million from the government every year compared to £1 million for choirs. It is only fair that a substantial increase in funding is made that reflects the numbers of participants and thus treats choral singers fairly. The benefits for those who sing in a choir are comparable to those who play football: increased lung capacity, better posture, improvements to the immune system, and a general sense of well-being. A choir also fosters teamwork, where there is cooperation, determination, discipline and imagination, drawing the best from every individual involved and creating something much greater than the sum of its parts.

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

- A** The better-off countries have to tackle poverty in our world when we still have over a billion people living on less than a dollar a day.
- B** Audience figures at regional theatres are now greater than in the capital, so they deserve an increased share of the financial aid set aside for the arts.
- C** The proportion of people needing treatment for mental health issues has increased by 25% in a decade and more funding is needed to deal with this crisis.
- D** If citizens are able to raise a large amount of money towards a community sports centre, then the local council should show good faith by matching that amount.
- E** Our arts sector continues to generate an increasing share of national income, so we need to keep building on this success by encouraging the next generation of young actors, musicians, and other artists.

- 18** Every week I buy 12 cans of lemonade. The shop that I always buy them from sells individual cans for 80p each and packs of 4 cans for £2.60, so I buy three packs of cans.

Last week the shop had a special offer, as follows:

Individual cans – buy one, get another half price

Pack of 4 cans – buy one pack, get a 5<sup>th</sup> can free

I didn't want more than 12 cans, and I managed to get 12 cans for the lowest possible total price.

How much less than usual did I pay for my 12 cans last week?

- A** 20p
- B** 60p
- C** 80p
- D** £1.00
- E** £1.40

- 19 I have booked myself, my wife and our three children into The Wavecrest Hotel, Southbourne, for seven nights from June 19th. The hotel has sent us a 'What's on' booklet, and we are particularly keen to see *Oliver!*, the advertisement for which is shown below:

The Southbourne Songsters present  
OLIVER!  
at the Pavilion Theatre  
from Monday 3rd June to Saturday 22nd June  
Nightly at 7.30pm  
Matinees Wednesdays & Saturdays at 3pm  
Adults: £12 (Matinees £10)  
Children: £6 (Matinees £5)  
Family Ticket: £28 (all performances)  
(2 adults and 2 children)  
Monday nights: £5 (all tickets)

What is the **least** it could cost for us all to see *Oliver!* during our holiday in Southbourne?

- A £25
- B £28
- C £33
- D £34
- E £35

**20** In computer technology, a bit can take two values: 0 or 1. A byte is composed of 8 bits.

I start with the following byte: 01000111

I choose two adjacent bits and change each of them to the opposite value (that is, a 0 becomes a 1, and a 1 becomes a 0). I repeat this procedure a number of times.

Which one of the following bytes **cannot** be the result?

**A** 01001011

**B** 11111111

**C** 10101011

**D** 10111101

**E** 00001111

**21** In real terms, spending on education in the UK is going down. But reductions in funding always mean a reduction in the quality of education provided. In the current climate, we should expect to see the quality of education in the UK diminishing.

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

**A** No one ever succeeds at anything unless they make an effort. But you've just won an award for your work in physics, so you must have made an effort.

**B** When the water is at this level, it's either high tide or a flood. High tide is not for another eight hours. So there must be a flood upstream.

**C** If you take regular exercise, you'll be fit in heart and mind. You've been working out twice a week for three months now, so you must be happy and healthy.

**D** If you eat sweets every day you're more likely to need dental treatment. Sam has had a lot of dental treatment so he must eat sweets every day.

**E** The car won't run without a working battery. I can't get the car to start so the battery must be dead.

- 22** Maths is the most popular subject taken at A Level in the UK. Most of the best-paid jobs are in the technology and finance sectors, which tend to require maths. The majority of students achieving the best grades in maths are boys, which helps to explain the persistence of the gender pay disparity. But what explains the gender disparity in Maths A Level results – genetic inheritance or social conditioning? International studies of achievement in maths show that in some countries girls outperform boys in maths, suggesting that social conditioning is the explanation. From this we can conclude that the better achievement in maths of boys in the UK is caused by low expectations of girls in maths by teachers and parents.

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

- A** It assumes that the only factors in social conditioning are the expectations of teachers and parents.
  - B** It fails to explain why the relative achievement of boys and girls varies country by country.
  - C** It fails to consider the changing picture of achievement by boys and girls over time.
  - D** It ignores the relatively better achievement of girls in some other subjects.
  - E** It confuses the gender pay disparity with achievement disparities.
- 23** In many cultures, traditional heterosexual male preferences for spouses have centred upon a woman's preparedness – and willingness – to fulfil childcare and other domestic duties and not on her academic achievements or career potential. This kind of expectation on the part of men has served as a significant obstacle to women pursuing careers outside the home. It is for this reason that recent data on educational attainment within married, heterosexual couples is a cause for celebration. In many countries, university-educated men are now proportionally much more likely to marry university-educated women than was the case in their fathers' generation. This shows that more men are valuing the potential of their female partners to develop a career outside the home, and represents the breaking down of another barrier to equality.

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

- A** In many cultures, men now expect to have more 'hands-on' involvement with domestic duties than was the case in previous generations.
- B** Many more women are now earning university degrees, irrespective of whether they intend to go on to pursue careers outside the home.
- C** Infertility problems are on the rise among couples who focus on their careers first before trying to have children.
- D** The countries where more university-educated men are marrying university-educated women do not have particularly strict laws regarding gender discrimination at work.
- E** In recent decades, many countries have experienced a significant growth in the number of men who have received a university education.

- 24** I had planned my day trip to the stately home very carefully, but then the bus was late. I won't arrive until 11:30 am and will have to leave by 4:15 pm. There were five things that I had wanted to do and I had written these down in the table below:

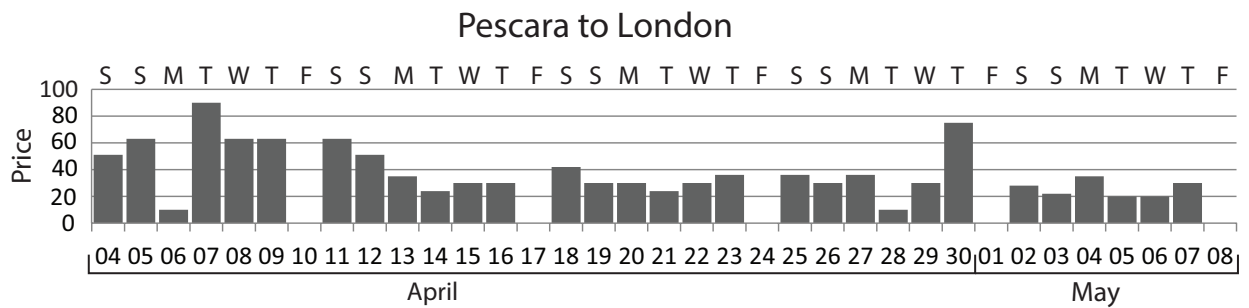
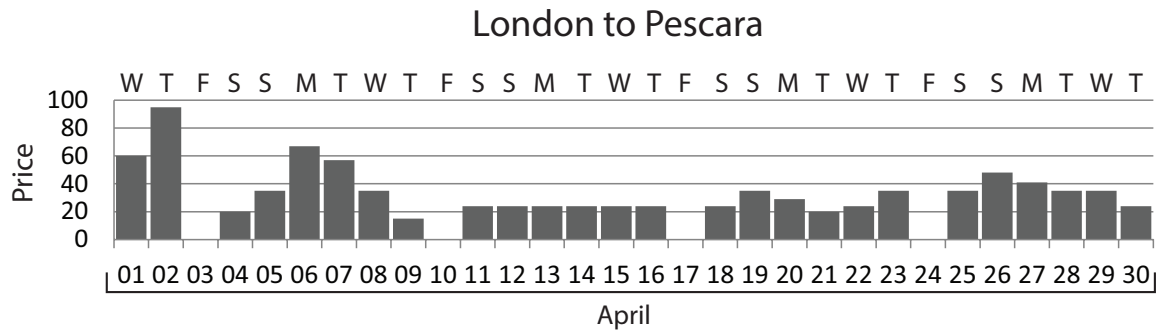
<i>activity</i>	<i>length of time</i>	<i>start times</i>
visit the museum	55 minutes	11 am or 2 pm
visit the maze	55 minutes	every half hour (at quarter past and quarter to the hour)
take the guided tour	80 minutes	1 pm or 3 pm
walk in the grounds	75 minutes	any time
have lunch in the café	25 minutes	between 12:30 pm and 2:00 pm

Which activity should I miss out so that I can still do the other four?

- A** visit the museum
- B** visit the maze
- C** take the guided tour
- D** walk in the grounds
- E** have lunch in the café

- 25** Steven would like to book return flights from London to Pescara, Italy. He would like to spend at least 3 days in Pescara excluding the days of his flights. Steven has lectures in London every Wednesday that he must attend. However, there are no lectures during the 20th–24th April spring break.

The prices of flights between London and Pescara are shown for the time period Steven would like to make the trip. The airline does not have any flights between these destinations on Fridays.



If he books the cheapest flights possible to allow him to travel according to his requirements, on which days will he depart and return?

- A** Depart: Saturday 04 April; Return: Monday 06 April
- B** Depart: Thursday 09 April; Return: Tuesday 14 April
- C** Depart: Thursday 09 April; Return: Tuesday 28 April
- D** Depart: Tuesday 21 April; Return: Tuesday 28 April
- E** Depart: Thursday 30 April; Return: Tuesday 05 May

- 26** The current 'Special Offer' gimmick at Fareprice involves putting a band marked 'TWINPACK - 25% OFF' around pairs of selected items, such as washing powder.

Which one of the following 'Special Offers' is exactly the same as Fareprice's?

- A** 'Buy one - Get a second for half price.'
- B** A larger packet containing 50% extra for no extra cost.
- C** 'Three for the price of two.'
- D** A coupon on each packet which gives 25% off the cost of the next packet.
- E** 'Five for the price of four.'

- 27** People are understandably suspicious of big, centralised governments – government by people based a long way away from them, who seem disconnected from their lives and concerns. Instead there is a movement to give local people more control over what goes on in their area. The trouble with this is that people will always choose to protect their local interests over those of the wider group. Take energy: no one wants wind farms, fracking, solar power units or any sort of power station near them. It is always local groups that fight to stop them being built. Highly localised politics is not the solution. By ensuring that each small group wins its own little local battle, we are guaranteeing that everyone loses.

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

- A** People's suspicions of big, centralised governments are understandable.
- B** People will always choose to protect their local interests over those of the wider group.
- C** It is typically local groups that campaign to prevent new developments from happening.
- D** Highly localised politics is not the way to solve the problems our political system faces.
- E** Ensuring that each small group wins its own local battle means that everyone ultimately loses.

- 28** Some property developers have discovered that designing energy-efficient buildings can provide them with a 'green premium'. The government-backed Energy Star programme has been designed to identify and promote products that reduce greenhouse gas emissions. Researchers found that the positive impact on the selling prices of 'green buildings' was around 16%. The value of rents was also significantly enhanced by the Energy Star label. If taking advantage of the green premium to increase a company's profits has positive consequences for the environment, then it is all to the good. Outcomes are all that matter, contrary to the view of many green campaigners that, unless a policy is motivated purely by environmental concern, there is no virtue in it.

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

- A** Unless a firm makes fair pay and good conditions a top priority for its workers, it cannot be judged a good employer.
  - B** Awards should only be given to individuals or organisations that intentionally put the good of others before their own advantage.
  - C** Reductions in expenditure on some public services should be welcomed if the result is more money for schools and hospitals.
  - D** Research into drugs that maximise the profits of the big pharmaceutical companies is desirable if the result is that more lives are saved.
  - E** Longer prison sentences should be imposed on the criminal minority for the benefits of the large majority of citizens who are law-abiding.
- 29** The 'ticking time bomb' scenario demonstrates that it is possible for torture to be morally permissible. In the scenario, a person with knowledge of an imminent terrorist attack that will kill many people is in the hands of the authorities, and will disclose the information needed to prevent the attack only if she is tortured. The consequences of not torturing her – many people dying – are far worse than the consequences of torturing her – one person being tortured – so in this situation torture would be morally permissible.

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

- A** If an action is morally permissible in one situation, it is morally permissible in other situations too.
- B** Dying is worse than torture.
- C** The moral status of an action is determined by its consequences.
- D** Ordinarily, torture would be morally wrong.
- E** If an action is morally permissible, then it ought to be carried out.

- 30 Joyce has decided to volunteer to work in the local High Street Charity Shop. She has agreed to be in the shop for 4 hours on a Saturday.

To get from her home to the High Street, Joyce will have to travel by bus. Her walk from home to the bus stop is no more than 5 minutes, and the bus journey each way takes between 20 and 30 minutes depending on traffic.

Buses from Joyce's home leave for the High Street at 30 minute intervals, on the hour and on the half hour. Return buses for Joyce leave the High Street at 30 minute intervals, at 15 minutes past the hour and 15 minutes to the hour.

The walk to and from the bus stops to the Charity Shop is no more than 5 minutes.

Joyce wants to catch the 13:45 bus home after working in the shop.

What is the latest time that she should leave home for work?

- A 08:25
  - B 08:30
  - C 08:55
  - D 09:00
  - E 09:25
- 31 The prices for tickets to a concert are set based on the day of the performance and the number of tickets that have been sold so far. The table below shows the ticket prices. There are 1000 tickets on sale for each performance.

<i>Day</i>	<i>First 200 tickets</i>	<i>Next 300 tickets</i>	<i>Next 500 tickets</i>
Monday–Thursday	\$15	\$20	\$25
Friday	\$20	\$25	\$30
Saturday	\$20	\$30	\$35
Sunday	\$25	\$35	\$45

I need to buy 10 tickets for Saturday's performance. I will buy all of them in one purchase this afternoon.

Which of the following is **not** a price that I might have to pay for the tickets?

- A \$250
- B \$275
- C \$300
- D \$325
- E \$350

- 32** Bert has agreed to make 14 decorations for his daughter's birthday. Each decoration will require two gold ribbons, one 12 cm long and the other 7 cm long.

The table shows the lengths and prices of available gold ribbon.

<i>gold ribbon price list</i>	
gold ribbon length	price
30 cm	£4.00
50 cm	£5.00
60 cm	£6.00

The ribbon can be easily cut to size for the decorations, but short pieces of ribbon cannot be joined to make longer lengths.

What is the least amount that Bert will need to spend on gold ribbon for the 14 decorations?

- A** £26.00
  - B** £27.00
  - C** £28.00
  - D** £29.00
  - E** £30.00
- 33** The last century has seen amazing advances in medical research and practice. By preventing millions of premature deaths and reducing pain and incapacity, they have transformed life all over the world. But it is now time to call a halt. Further progress in surgery or medicine will be too expensive for any but a very few excessively rich people to be able to benefit from it. Trying to meet the medical needs of a whole population will therefore bankrupt any country which is foolish enough to attempt it. Extending the slow decline towards the grave does more harm than good, because no one looks forward to a life of increasing dependence and deteriorating mental capacity.

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

- A** Medical progress has achieved great benefits in every part of the world.
- B** Work on developing new medical and surgical treatments should now cease.
- C** Any new medicines and new surgical procedures which are developed will cost too much.
- D** No country can now afford to give total medical care to all its people.
- E** The prolongation of old age is not a benefit.

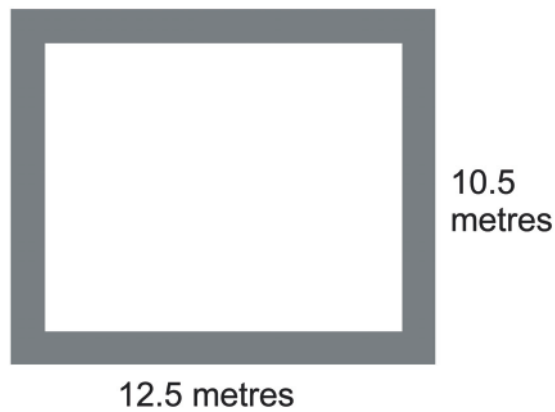
- 34** Campaigners have long been calling for a change in the law to force social media companies to take racist, sexist, terrorist, or obscene material posted on their platforms more seriously. They want the government to bind Facebook, Google, etc. to the same strict rules that apply to newspapers and magazines. But that would be wrong. The proprietors of newspapers and magazines are classified as ‘publishers’, and all publishers are responsible for the content that is printed or displayed on their pages, whoever has contributed it. But the operators of social media platforms are not publishers in the proper sense of the word, and therefore they are not accountable for what individuals post on their platforms.

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

- A** The fact that social media operators are not classified as publishers does not mean they cannot have some of the same responsibilities.
  - B** The fact that the government wants to bind the media giants to strict rules is not a reason to conclude that they will be successful.
  - C** The fact that communication platforms have not been subject to the same standards as publishers in the past does not mean that they will continue to be so in the future.
  - D** The fact that newspaper and magazine proprietors are classified as publishers does not make it right to hold them responsible for what their contributors write.
  - E** The fact that Facebook and Google do not take their responsibility seriously does not necessarily apply to all social media providers.
- 35** There are countless ways to get rich in this world. Those who do not achieve wealth either do not find it important or simply have bad luck. Jane is poor but she has always valued material goods, so she must have been unlucky in her life.

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

- A** Anyone can become prosperous by working hard. Tom is not wealthy so he must not have been working hard.
- B** There are numerous ways to become famous. Among others, one can learn to play a musical instrument very well, study to become a world-class scientist or just upload a funny video of oneself to the internet. Mike is not famous because he has not done any of these.
- C** To make a cake sweet, one can use either sugar or honey. This cake is not sweet because it was made with neither sugar nor honey.
- D** Two paths lead to the lake: one through the forest and another over the mountain. You must have arrived at the lake by the forest route because you were not on the mountain path.
- E** It takes a lot of luck to win the lottery. I have never won the lottery, so I must not have been lucky so far.



The whole of my garden is a patio, which is 12.5 by 10.5 metres. I intend to resurface my patio. I would like my patio to include a 25 cm border of bricks and the remainder of the patio inside the border to be covered with paving slabs.

The bricks I will use for the border are 25 cm x 25 cm and the paving slabs I will use for the remainder are 30 cm x 20 cm.

What is the total number of bricks and paving slabs that I will need for my patio?

- A 2000
- B 2180
- C 2184
- D 2268
- E 2272

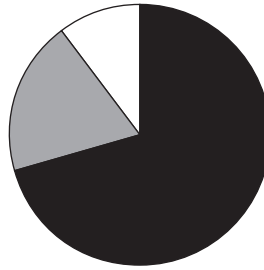
- 37 The table below shows the popularity of different breakfasts served in a hotel from 2006 to 2012.

<i>breakfasts</i>	2006	2007	2008	2009	2010	2011	2012
bacon, egg, sausage and fried bread	70%	60%	50%	40%	30%	20%	10%
porridge, toast and marmalade	5%	10%	15%	20%	25%	30%	35%
toast and jam	5%	5%	5%	5%	5%	5%	5%
boiled egg and toast	10%	10%	15%	15%	15%	15%	15%
fresh fruit and cereals	10%	15%	15%	20%	25%	30%	35%

From the figures in the table, which one of the following statements is **not** true?

- A Breakfasts of toast and jam have never been more popular than in 2006.
- B The popularity of breakfasts that include porridge overtook the popularity of breakfasts that include eggs in 2012.
- C The popularity of breakfasts that include porridge or cereals has gone up 10 percentage points, year on year, for the last four years shown in the table.
- D In every year between 2006 and 2012, the popularity of breakfasts that include fresh fruit was the same as the popularity of breakfasts that include marmalade.
- E The popularity of breakfasts that include toast has increased year on year.

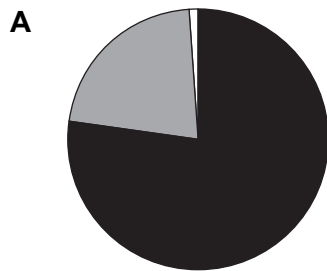
- 38 At a smoothie factory, a tropical smoothie mixture contains banana, orange and apple in the proportions shown in the pie chart below.



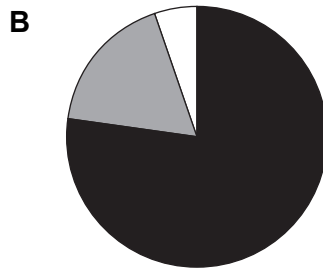
■ banana  
 ■ orange  
 □ apple

The chief taster requested a new recipe, in which every litre contained 10% more banana than was present in the original mixture, and 10% less orange than was present in the original mixture. This change also affected the proportion of apple in the mixture.

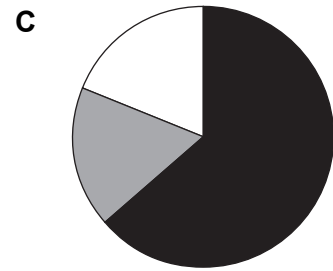
Which one of the following graphs shows the content of the new smoothie mixture?



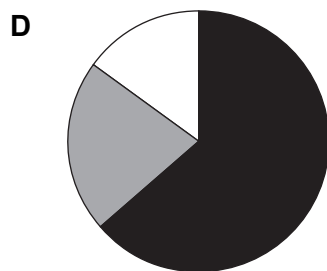
■ banana  
 ■ orange  
 □ apple



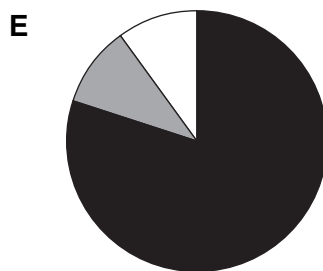
■ banana  
 ■ orange  
 □ apple



■ banana  
 ■ orange  
 □ apple



■ banana  
 ■ orange  
 □ apple



■ banana  
 ■ orange  
 □ apple

- 39** If the captain of a national team commits any kind of crime, he or she is likely to be dropped, heavily fined by the sport's governing body, or barred from future competition. This is on top of any punishment handed down by the courts. Senior politicians, doctors, judges or head teachers who offend also find themselves barred from their professions, with little or no chance of regaining their hard-earned status after serving their sentence. There is nothing unjust in this, although it is effectively a double punishment for a single offence. Privileged people must understand that with rewards come responsibilities, including the responsibility to behave in a more exemplary way than those in ordinary walks of life.

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

- A** A crime is a crime whoever commits it, and no exceptions should be made for highly placed people.
- B** A police chief who accepts a bribe deserves more blame than the criminal who offers the bribe.
- C** Leading sports personalities should understand that they are role models for young people.
- D** It is wrong to use the law to make an example of some people but not others.
- E** People on low incomes who commit offences should have reduced sentences.

- 40** What is there in the universe that we know, or have good reason to believe, to possess consciousness? Humans, and perhaps certain other animals. What do they all have in common? They are living beings, made of flesh and blood. As far as we know, nothing else in the universe contains any consciousness at all. For all the mystery of consciousness, of exactly what it is, and of how and why it arises, there is one thing that is certain: it is a biological phenomenon. Any fears surrounding the possibility of so-called 'artificial intelligence' are therefore misplaced. If machines are not biological organisms, then they cannot have a mind. Do not expect man-made machines to be conscious – now or ever!

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

- A** It assumes that just because the only things we know to possess consciousness are biological organisms, they are the only things that could do.
- B** It draws a general conclusion about the properties of all naturally existing objects on the basis of merely a finite selection.
- C** It takes for granted that we understand exactly what it means to be conscious, when this is a vague and undefined term.
- D** It fails to consider the phenomenal speed with which new developments in technology are actually occurring.
- E** It ignores the possibility that some plants might possess a basic form of consciousness of their own.

- 41 Some readers think there is nothing to learn from historical fiction. Yet the historian and the writer of historical fiction can work in a way that is complementary. Historical novels can thus enrich our understanding of the past. History is a record of the past that is full of gaps. We mostly don't know what was said or how people behaved when there was no one around to record what was going on. The historian's trade is never simply about stockpiling facts. The novelist's trade is never just about making things up. Those undocumented areas of history often force us to contemplate the most private, human moments, away from the public stage, and the blank spaces they leave are irresistible to a novelist.

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

- A Most areas of history were never documented.
  - B We can never know exactly what happened in the past.
  - C Historical novels can add to our understanding of the past.
  - D Not everyone thinks we can learn something from historical fiction.
  - E The work of the historical novelist is not just about making things up.
- 42 On sports day at Thiska Academy points are awarded in each event as follows:

winner	12 points
2 <sup>nd</sup> place	8 points
3 <sup>rd</sup> place	5 points
4 <sup>th</sup> place	3 points
5 <sup>th</sup> place	1 point

Each student may enter no more than three events.

What is the smallest points total that it is **not** possible for an individual student to score?

- A 22
- B 26
- C 30
- D 33
- E 37

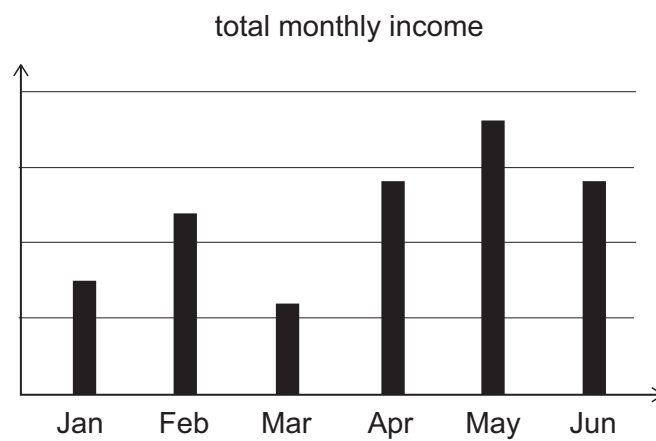
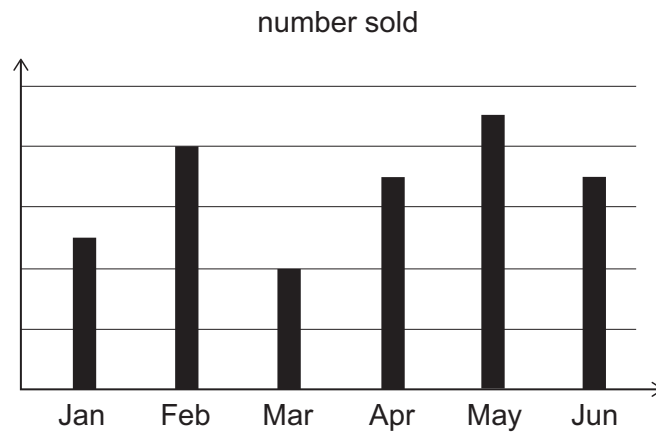
- 43 Every Christmas the most popular children's toys become scarce. Many people turn to online auction sites to buy them instead. The table below shows the recommended retail price and the price that the listed toys have sold for online.

<i>children's toy</i>	<i>recommended retail price (\$)</i>	<i>online auction site (\$)</i>
Moshling Tree House	18.99	198.98
LeapPad Explorer	79.99	225.00
Doggie Doo	24.99	50.00
Fireman Sam Pontypandy Rescue set	29.99	59.99
Fijit Friends	54.99	99.95
Monster High Lagoon's Station	29.99	59.98
Nerf Vortex Nitron Blaster	44.99	59.99
Kidizoom Twist	49.99	65.95
Milky the Bunny	59.99	74.99
Star Wars Ultimate Force Lightsaber	39.99	49.95
Lets Rock Elmo	69.99	84.99
Ninjago Fire Temple	91.99	96.99
Sylvanian Families	79.95	192.29
Vtech Innotab	79.99	150.99
Lego Star Wars Millennium Falcon	132.99	265.98

How many of the toys above have increased in price by more than 100%?

- A 3
- B 4
- C 5
- D 6
- E 7

- 44 A store sells a particular type of television. The graphs below show the number of these televisions sold per month and the total income from their sales per month, over a six-month period.



The price at which these televisions were sold was increased at the beginning of one of the six months.

At the beginning of which month was the price increased?

- A February
- B March
- C April
- D May
- E June

- 45** The UK is the most researched nation on Earth. Some £60 per head is spent each year on surveys, polls, consumer panels and questionnaires, more per capita than any other country, according to the Market Research Society. No wonder many Brits are suffering from survey fatigue and refuse to fill out questionnaires. This reluctance to participate is very likely to have contributed to incorrect polling predictions in several elections.

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

- A** Opinion polls in the UK are less accurate than in other countries.
  - B** It is impossible to predict accurately how people will vote in a given election.
  - C** Survey fatigue is the main reason why polling can give inaccurate predictions.
  - D** More polling does not necessarily give a more accurate picture of popular opinion.
  - E** To get an accurate picture of people's voting intentions, we should not rely on use of a questionnaire.
- 46** My dog's coat had been looking dull, so I bought some conditioning tablets. The pet shop stocks these in boxes of 300 tablets, and for a dog the size of mine the recommendation (which I have followed) is 6 tablets per day.

Now, several months later, his coat is much shinier. Opening a new box of tablets today, I have decided to reduce his dosage. I shall just give him 6 tablets per day, twice a week, and on the remaining days each week he can have 4 tablets each day.

What is the maximum number of extra days that this box of conditioning tablets will now last?

- A** 10 days
- B** 15 days
- C** 16 days
- D** 24 days
- E** 25 days

- 47** The UK private security industry employs half a million people in a range of roles, including supervising public events, guarding cash in transport, and assisting police in surveillance work. Some government officials are pushing for the legal regulation of such work to be moved out of government agency control and placed in the hands of the private security companies themselves. According to these officials, self-regulation is justified on economic grounds and because of the sector's 'willingness to ... be more accountable for its own actions'. The foolishness of this argument is breathtaking. The power entrusted to these workers over valuable property – not to mention the safety of people – means that there's a fundamental need for monitoring and oversight of standards of conduct by an impartial, trustworthy source.

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

- A** The UK private security industry is likely to continue to grow rapidly in the near future.
  - B** Self-regulation of an industry is an unwise approach regardless of the sector concerned.
  - C** By government standards, the current regulatory system for the UK private security sector is economically efficient.
  - D** Many companies in the UK private security industry have a poor record when it comes to issues of professional misconduct or corruption.
  - E** The government agency staff are less susceptible to corrupt or unfair practices when regulating the workers than are those at the private security companies.
- 48** Trains run regularly between Ayton and Exbay, stopping at Beetown, Chalton and Deeford, according to the following timetable.

<i>Departures</i>			
Ayton	7:10	and every 40 minutes until	21:10
Beetown	7:25		21:25
Chalton	7:30		21:30
Deeford	7:44		21:44
Exbay	8:02		22:02

George lives a 14-minute walk away from Beetown station. He is going to the cinema in Exbay to watch a film that starts at 19:20. It will take him five minutes to walk from the station at Exbay to the cinema. George wants to make sure that he will miss no more than the first five minutes of the film.

What is the latest time George should leave home?

- A** 17:36
- B** 17:51
- C** 18:05
- D** 18:19
- E** 18:31

- 49** One often hears that this or that action is justified or unjustified morally on the grounds that it is 'natural' or 'unnatural'. To say that something is 'natural' is really just to say that this is how things happen to be. Yet just because something happens to be the case, it doesn't mean that it ought to be the case. After all, there are plenty of things in life that are natural – for instance illness and disease, droughts and earthquakes; even emotions such as aggression, jealousy, anger and a desire for revenge. This does not mean that they are to be encouraged or welcomed. To say of something that it is natural, or unnatural, is not to provide anything by way of moral justification.

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

- A** The fact that human beings have a tendency to be competitive does not mean that this should be encouraged in schools.
- B** The fact that someone believes that human beings ought always to behave ethically does not mean that they actually will.
- C** The fact that some countries have laws protecting freedom of speech does not mean that all countries should.
- D** The fact that some things in life are clearly unpleasant does not mean that life itself is not worth living.
- E** The fact that someone thinks a particular person is not to be trusted does not mean that the person in question is indeed untrustworthy.

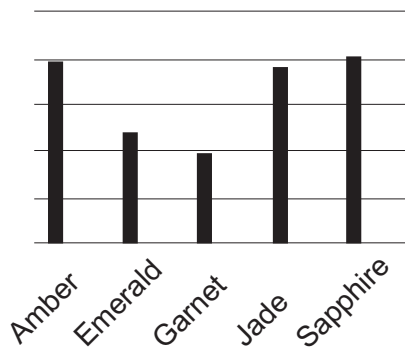
50 The table below shows the medal count by the top five teams in a recent Mini Olympics.

<i>teams</i>	<i>gold medals</i>	<i>silver medals</i>	<i>bronze medals</i>
Amber	8	7	6
Emerald	5	10	6
Garnet	6	6	10
Jade	6	5	5
Sapphire	11	8	9

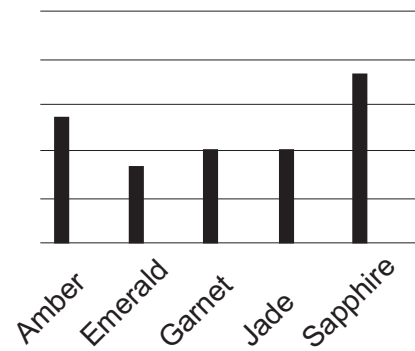
Each team calculated the proportion of their medals that were gold.

Which one of the following charts, with appropriate labelling, shows this proportion for each of the five teams?

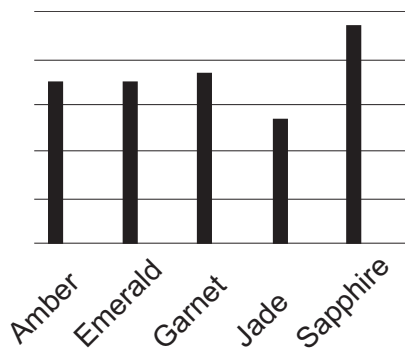
**A**



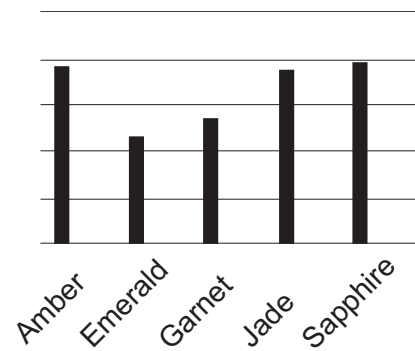
**B**



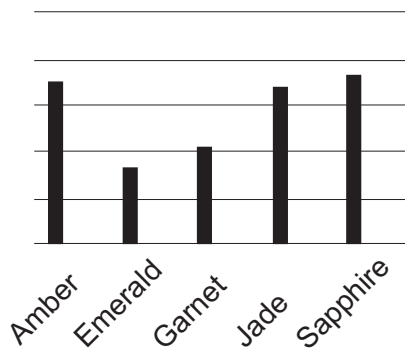
**C**



**D**



**E**



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