



BioMedical Admissions Test

4500/11

2023

60 minutes

SECTION 1

Thinking Skills

INSTRUCTIONS TO CANDIDATES

Please read this page carefully, but do not open the question paper until you are told that you may do so.

This paper is Section 1 of 3. Your supervisor will collect this question paper and answer sheet before giving out Section 2.

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:

- BMAT candidate number
- Centre number
- Date of birth
- Name

Speed as well as accuracy is important in this section. **Work quickly, or you might not finish the paper.** There are no penalties for incorrect responses, only marks for correct answers, so you should attempt **all** 32 questions. Each question is worth one mark.

Answer on the sheet provided. Questions ask you to show your choice between options by shading one circle. 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 question paper consists of 23 printed pages and 5 blank pages.



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- 1 Lizards are a large group of reptiles comprising more than 6000 species. Like the snakes to which they are closely related, they have scaly bodies and long tails, but unlike the snakes they are typically four-legged. Some reptile species, such as *Ophisaurus ventralis* and *Anguis fragilis*, are legless, with scaly and elongated bodies, looking just like snakes. These species, however, are still classified as lizards. The confusion arises from the fact that over many generations a number of four-legged lizard species have gradually lost their limbs while adapting to the environment they inhabit. It is often difficult to tell a legless lizard from a snake if you do not observe the animals closely and search for some characteristic features. Lizards differ from snakes, for instance, in having clearly visible ear-openings on the sides of the head.

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

- A Lizards have a more acute sense of hearing than snakes.
- B All currently living reptiles are either lizards or snakes.
- C *Anguis fragilis* and *Ophisaurus ventralis* have visible ear-openings.
- D If an animal has a scaly body and a long tail, it is a reptile.
- E The only way to tell a lizard from a snake is by the presence or absence of ear-openings.

- 2 Maisy bought a bag of bird seed on a visit to a wetland centre.

The bag had a tiny hole in the bottom and as Maisy was walking along, seeds were dropping out of the bag and slowly making the hole bigger.

During the first minute 5 grams of seed dropped through the hole, but with each successive minute, the loss of seeds progressively increased by 1 gram, i.e. 6 grams in the second minute, 7 grams in the third minute, etc.

After 5 minutes of walking, Maisy took a 20 gram handful of seeds out of the bag to feed some ducks.

After another 5 minutes, Maisy took another 20 gram handful of seeds out of the bag to feed some geese.

After a further 5 minutes, Maisy stopped walking and realised that she had only half the quantity of seeds that she started with.

How much seed was in the bag when Maisy bought it?

- A 118 grams
- B 230 grams
- C 360 grams
- D 440 grams
- E 480 grams

- 3** Researchers invited 100 unacquainted strangers to a laboratory, divided them into pairs and asked them to chat for between 10 and 40 minutes. The scientists recorded the conversations while noticing that most were so trivial and boring that at times it was challenging to even observe them. Only 2% of the exchanges ended when both parties felt like it and nearly 70% of the participants thought that their chats should have stopped much earlier than they did. Based on these findings, it is evident that the average human conversation lasts much longer than it needs to. People should try to end their typical chats sooner than they usually do.

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

- A** Scientists' opinions about what is trivial or boring in conversations may differ from those of the general population.
- B** The fact that many of the recorded conversations were very boring may explain why most of the participants thought that their chats lasted longer than necessary.
- C** The upper limit of 40 minutes set by the scientists may have been insufficient for discussing all the important points in an average human conversation.
- D** Observed conversations between strangers in a laboratory may not be representative of typical everyday conversations.
- E** Ending a chat too soon may leave one of the participants feeling awkward.

- 4** In some schools, students are pressured into applying to university. This pressure might come in the form of teachers recognising students' talents and encouraging them to fulfil their potential. But often it relates more to parents' expectations and schools wanting to distinguish themselves through students' achievements. Fortunately, greater numbers of school officials are beginning to understand the potential harms of pushing students towards career pathways they don't really want. These officials are taking a step more schools should follow. They are bringing in career guidance counsellors to advise students about the range of options available to them following school. It is important that students are made aware of the training and career paths outside of the university route that might better suit their own objectives and interests.

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

- A** The most successful individuals are those who pursue careers that best suit their interests.
- B** Not many people change their minds about the career they want in the years after finishing school.
- C** Bringing in career guidance counsellors to give advice would not place a significant economic burden on most schools.
- D** School officials' main responsibility is to ensure that students are prepared for their future careers.
- E** Career guidance counsellors are more likely than other school staff to base their advice on students' own interests or goals.

- 5** Contrary to what one might expect, sharp knives are actually safer to use than dull ones. A well-sharpened blade will 'bite' into the surface of a smooth, firm object such as an apple and cut it easily. A dull blade, on the other hand, will skid along the surface and therefore requires more pressure and finesse to cut effectively. Such a blade is harder to control, and this means that accidents are more common.

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

- A** With the exception of professional chefs, most people do not tend to keep their kitchen knives very sharp.
- B** Blade-sharpening tools like whetstones, water stones and honing steels require training to use correctly.
- C** An accidental injury from a sharp blade will generally be much more serious than one from a dull blade.
- D** A sharp blade allows for faster and more precise food preparation, which can make cooking more enjoyable.
- E** High-quality knives of the kind that keep a sharp edge are expensive, as are blade-sharpening tools.

- 6** As a safety measure, I use two rear bike lamps when it is dark. Both of the lamps are in 'flashing mode' which means that they repeatedly emit light for a set period of time at set intervals. One of the lamps emits light for 3 seconds and goes dark for 2 seconds between the flashes. The other lamp emits light for 2 seconds and goes dark for 2 seconds. The two lamps are switched on at exactly the same time.

For how many seconds in each minute do neither of the lamps emit light when I am riding in the dark?

- A** 10
- B** 12
- C** 15
- D** 20
- E** 30

- 7 Last night's concert at the Hytime Theatre was a sell-out and the income from the ticket sales was £19,200. The tickets were priced as follows:

Front stalls	£20
Centre stalls	£16
Rear stalls	£10

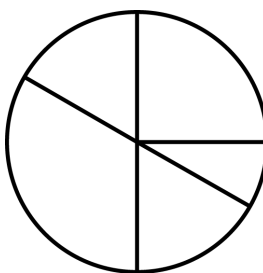
Exactly half of the income came from tickets for the centre stalls, and the other half was divided equally between the front stalls and the rear stalls.

Every row in the theatre contains 30 seats.

How many rows of seats make up the front stalls at the Hytime Theatre?

- A 8
- B 10
- C 16
- D 20
- E 25

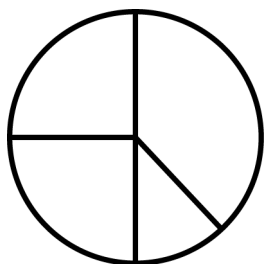
- 8 The following pie chart represents the scores that each of five people attained in a recent game.



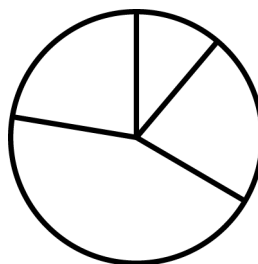
Each player drew a pie chart to show just the scores of the other players.

Which of the following charts is **not** one of those charts?

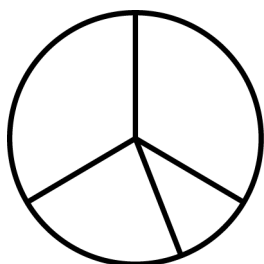
A



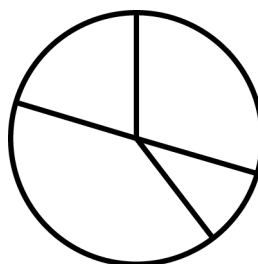
B



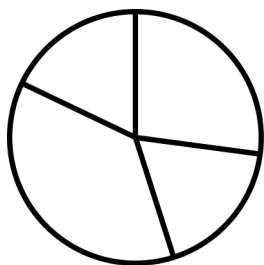
C



D



E



- 9 One immediate way of limiting the negative impact of human activity on the planet would be to reduce noise pollution in our oceans. A natural ocean soundscape is fundamental to healthy marine life. A review in the journal *Science* claims that the damage caused by noise to marine mammals, fish and invertebrates is as harmful as overfishing, chemical pollution and rising ocean temperatures. Yet it is being dangerously overlooked. There are solutions available, however: a newly designed propeller, suitable for large container ships, reduces noise and improves fuel efficiency. Electric motors and small reductions in speed are also effective: cutting the speeds of noisy vessels in the Mediterranean from 15.6 to 13.8 knots cut noise by 50% between 2007 and 2013. Furthermore, funding for these measures is readily available in the form of existing government subsidies and grants.

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

- A One immediate way of limiting the negative impact of human activity on the planet would be to reduce noise pollution in our oceans.
- B A natural ocean soundscape is fundamental to healthy marine life.
- C The damage caused by noise to marine mammals, fish and invertebrates is as harmful as overfishing, chemical pollution and rising ocean temperatures.
- D The damage caused by noise is being dangerously overlooked.
- E Funding for noise reduction measures is readily available in the form of existing government subsidies and grants.

- 10 You must have an internet connection and a library password to download the article from the online journal that the professor mentioned. I see that you are reading the conclusion of the article, so you must have received your library password and found an internet connection.

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

- A All newly designed kitchen equipment must pass a health and safety test before reaching the shops. The Cavorting Kitchen Multi-Mixer was not allowed to be sold; it must have failed the health and safety test.
- B Competing for a local team and winning a regional championship is the only way to get a place on the national weightlifting team. Katy is the captain of the national team. She must have competed for a local team and won a regional championship.
- C Only cardholders paying a monthly subscription fee can play tennis in the Mountainside Club. Neither Jeremiah nor his partner has a card for the Mountainside Club; therefore, they cannot play tennis there.
- D You cannot become a school bus driver without completing passenger-carrying training and obtaining a professional driving licence. You have finished the passenger-carrying training and you have a professional driving licence, so you can already drive a school bus.
- E A car must be safe to drive on main roads and over thirty years old to qualify for participation in the Old-Timer rally. Your car is seventeen years old, so you cannot participate in the Old-Timer rally.

- 11 Inheritance should be banned. The whole concept of inheritance just serves to make the rich even richer and is incompatible with most of the ideals of modern society. Why should some people be rewarded simply for winning the birth lottery? Having wealth determines a huge number of outcomes, from access to education to the ability to purchase property. As such, the children of wealthy parents continue to enjoy access to more economic resources despite the fact that they haven't done more work or put in more effort than their peers. In our world we should stop rewarding people who were simply born lucky, and instead celebrate those who worked hardest to get what they have.

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

- A Tax fraud that happened by accident should be punished at the same level as intentional fraud because the outcome is as important as the intent.
- B All public institutions should introduce gender and race quotas in order to achieve equality of representation.
- C The government should direct more money into helping to alleviate poverty since the poorer members of society don't deserve to be poor.
- D Intelligence tests should not be used when appraising job applicants because some people have a natural aptitude for them.
- E Most basic goods, like housing and food, should be given to people for free, because that's a minimum we deserve.

- 12 12 coins are lying on a table. Each coin has a head on one side and a tail on the other. 8 of the coins are showing heads and the other 4 are showing tails.

Faridah turns over 4 of the coins.

Which one of these statements **must** be true?

- A More coins are now showing tails than are showing heads.
- B The number of heads now showing on the coins that Faridah turned over is the same as the number of heads showing on the coins that she did not touch.
- C The number of coins that Faridah turned over that were showing tails is the same as the number of heads showing on the coins that she did not touch.
- D The number of tails now showing is odd.
- E The number of tails now showing on the coins that Faridah turned over is the same as the number of tails showing on the coins that she did not touch.

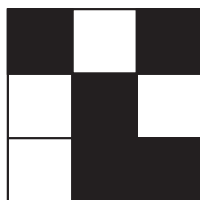
- 13** Jenny runs a flower shop. She has been asked to make 10 small bouquets for a friend. Each bouquet must contain 3 blue flowers and 8 white flowers, and no other flowers. The flowers are delivered to Jenny in boxes that contain only blue and white flowers. The total number of flowers in each box is at least 25 and at most 30. There are at least 4 and at most 10 blue flowers in each box.

How many of these boxes of flowers will Jenny need to be sure that she can make the bouquets for her friend?

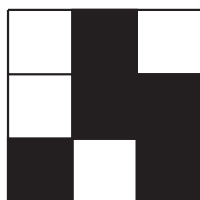
- A** 4
- B** 5
- C** 6
- D** 7
- E** 8

- 14 In my office I have a display on the wall that is made of a 3×3 grid of squares. Each of the squares can be changed so that it is either fully black or fully white. The whole display can also be rotated, either clockwise or anticlockwise.

Every morning, when I arrive at work I make one change to the display: **either** I change one of the squares **or** I rotate the display, either by a quarter or by a half turn. I never make more than one change. After the change this morning the display was as shown below.



I wish to change the display so that it appears as shown below.



What is the smallest number of days that it could take me to achieve my desired display?

- A 2
- B 3
- C 4
- D 5
- E 6

- 15** For those of us concerned about gender stereotypes and their role in maintaining sexist attitudes, the toys children play with signify far more than mere fun and games. Indeed, increasing attention is being paid to the importance of 'gender-neutral' play. Yet it appears that children themselves are failing to cooperate. In one recent experiment, four-year-olds in various countries were able to choose for themselves some items from a wide range of 'gender-neutral' and 'typical' boys' and girls' toys, however they are designated in the particular locations. The vast majority of girls selected 'typical' girls' toys and the boys, 'typical' boys' toys. This evidence supports an inconvenient truth: rather than reflecting sexist attitudes in society, children's play is likely to reveal a natural or biological basis for stereotypical gender roles.

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

- A** Toy manufacturers are not keeping up with demand for 'gender-neutral' products.
- B** The toys children play with matter more than the behaviour of adults in shaping children's ideas about gender.
- C** Society's attitudes about gender roles do not affect children's own toy preferences in the first few years of life.
- D** Adults do not effectively communicate the importance of 'gender-neutral' play to children.
- E** Adults need to free themselves of sexist attitudes before they can expect children to stop learning those kinds of ideas.

- 16** Vegetarians may well be right to say that modern factory farming methods are cruel. However, they take their arguments too far if they say that all meat-eating is immoral: it is clear that humans evolved to be able to eat meat, and have done so for countless generations. Humans have quite prominent canine teeth, similar to many meat-eating animals like dogs, cats, chimps and bears. Even giant pandas, which have canine teeth but mostly eat bamboo, will occasionally eat meat, and evidence suggests that they used to be primarily carnivorous. Humans must have eaten meat frequently in the past in order to evolve this feature.

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

- A** The fact that humans have eaten meat in the past does not mean that it is right.
- B** The fact that humans are able to eat meat does not mean that they should do so.
- C** The fact that many other animals eat meat does not mean that we should do it.
- D** The fact that factory farming is cruel does not mean that all meat-eating is cruel.
- E** The fact that humans evolved to eat meat does not mean that it was the most important part of our diet in the past.

- 17 You might think that the most important quality to possess as a diplomat is being diplomatic – in other words, being careful with what you say, so that you do not cause unnecessary offence to other parties. But in high-stakes contexts where negotiations have become difficult, it might be that you are better off being brutally honest. In a situation where trust has been all but lost, enabling people to feel you are being level and open with them may end up being more productive. The best way to do this is sometimes to show you are not afraid to cause offence. If a person feels you are more likely to offend them than be dishonest, they are more likely to trust your advice.

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

- A It might be thought that the most important quality to possess as a diplomat is being careful not to cause offence.
- B In high-stakes contexts where negotiations have become difficult, it might be better to be brutally honest.
- C In a situation where trust has been all but lost, enabling people to feel you are being level and open with them could be more productive.
- D Sometimes the best way to convince someone you are being honest with them is to show you are not afraid to cause offence.
- E If a person feels you are more likely to offend them than be dishonest, they are more likely to trust your advice.
- 18 A gardener has decided to create a display by planting four different types of flower. He has divided the garden into a grid of nine regions (a 3×3 grid of squares) and will not plant the same type of flower or the same colour flower in any two squares that share a side. If the type of flower that he chooses for a square is available in more than one colour then he will choose one colour for all the flowers that he plants in that square. All four types of flower must be used at least once. The four types of flower that he will use are as follows:

<i>type</i>	<i>colours available</i>	<i>cost per square of the grid</i>
tulip	red, yellow	£8
snowdrop	white	£10
crocus	white	£7
hyacinth	red, yellow	£9

What is the **lowest** total cost to create the display?

- A £67
- B £69
- C £70
- D £71
- E £75

- 19 The table shows the daytime internal flight schedule for the eight airports in Westonia.

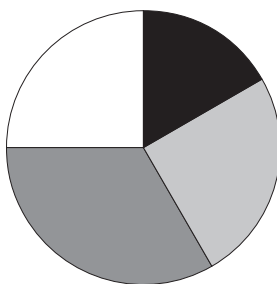
<i>TO</i> <i>FROM</i>	ASP	BOZ	CUD	DEC	ENJ	FUT	GOP	HAL
ASP	–	Fri	Sat	Sat	Wed	Mon	Mon	Fri
BOZ	Mon	–	Mon	Mon	Sat	Sat	Tues	Fri
CUD	Sat	Fri	–	Sun	Sat	Fri	Mon	Fri
DEC	Tues	Sun	Tues	–	Sun	Sat	Sun	Fri
ENJ	Sat	Sat	Thur	Thur	–	Fri	Sat	Fri
FUT	Mon	Sat	Thur	Sat	Sun	–	Fri	Sun
GOP	Mon	Fri	Fri	Mon	Sat	Sat	–	Sun
HAL	Sun	Sun	Sun	Sun	Sun	Tues	Tues	–

Jim needs to fly out from HAL on Sunday and return 5 days later having flown to, and stayed overnight in each of ASP, BOZ, CUD, DEC and ENJ. Using the schedule, Jim will need to work out the order in which he will fly from one place to another before he starts his journey on Sunday.

Out of which airport will Jim fly on Friday for his return to HAL?

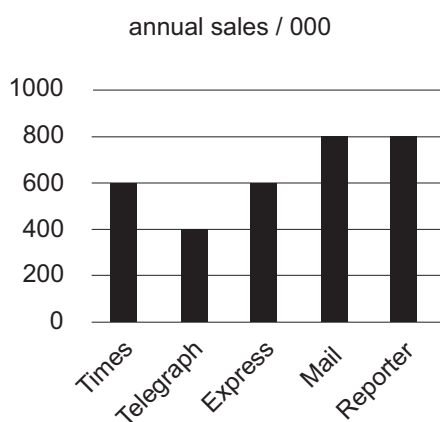
- A ASP
- B BOZ
- C CUD
- D DEC
- E ENJ

- 20** A country has five different newspapers: the Times, the Telegraph, the Express, the Mail and the Reporter. The following pie chart shows the relative annual sales for four of these newspapers last year:

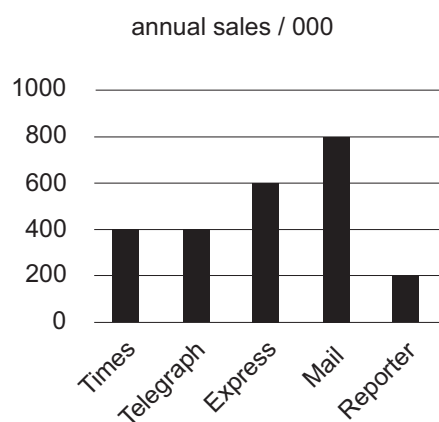


Which one of the following graphs could show the total annual sales of the five newspapers last year?

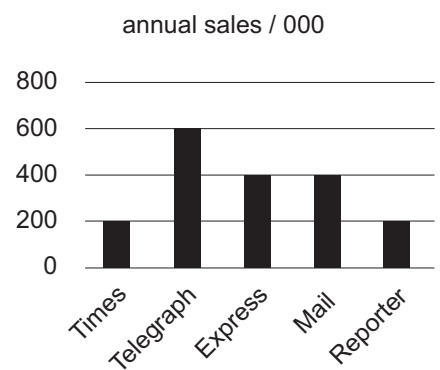
A



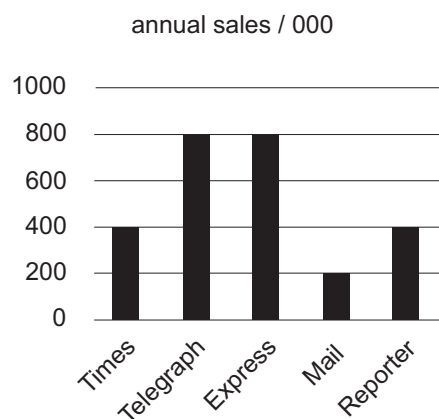
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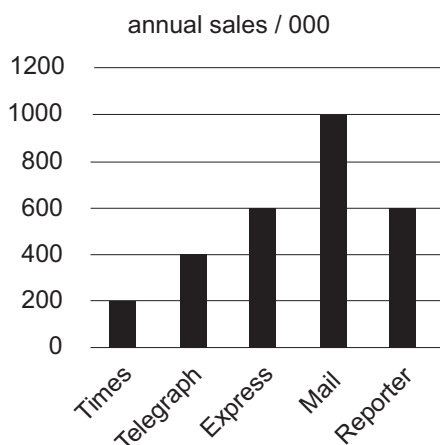
C



D



E



- 21** The Scottish Fold is a breed of domestic cat with floppy ears that are folded forward due to a genetic mutation. First discovered in Scotland by a shepherd, their distinctive, cute appearance led them to be bred extensively, and they are now popular worldwide. Unfortunately, their genetic mutation also affects the cartilage in their joints, which means that all Scottish Fold cats will inevitably suffer from severe early-onset arthritis in their legs and tail. Not only is this incurable condition painful, it also lasts for years and eventually leaves them unable to walk. Clearly, the breeding of Scottish Fold cats must be banned.

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

- A** Veterinary science should prioritise research into treating arthritis in animals.
- B** Medical treatments to manage pain in cats are difficult to obtain.
- C** Pets other than Scottish Fold cats do not generally develop early-onset arthritis.
- D** Domestic cats are not an endangered species.
- E** We should not knowingly promote the long-term suffering of animals.

- 22** In a (now well-replicated) experiment conducted by the cognitive scientist Robert Bjork in the 1990s, students were asked to study a passage of text with the aim of remembering it. Before reading it, one group was given an outline that summarised the information in the same order as the text, while another group was given an outline that put the same information in a different order – thereby making initial comprehension harder. Participants in the first group appeared to memorise the text more easily – they scored higher on a test of recall. But when the two groups were set creative problem-solving tasks related to the text – the kind of tasks that required a deeper understanding of its content – it was the second group who came out on top.

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

- A** We should not assume that memorising things easily is the same as understanding them deeply.
- B** Teachers should try to make learning as difficult as they can for their students.
- C** When we recall things easily, it means we have not understood them as deeply.
- D** The most important thing for students to remember is not to give up when things are difficult.
- E** The best way to test understanding is to ask people to apply the content being learnt creatively.

- 23** In order to take a person's viewpoint seriously on a given topic, you need to know that they have carefully considered both sides. Arun only reads articles that focus on the negative aspects of contemporary society, so his views concerning the modern world can be dismissed.

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

- A** You need to be able to accept some of your faults if you are going to be happy in yourself. Selina keeps trying to tell herself that she is perfect. Because she will not acknowledge her shortcomings, she will always be miserable.
- B** Only those who have received a formal invitation can attend the ceremony. I saw Yonatan's invitation on his mantelpiece yesterday, so he will almost certainly be attending.
- C** If you want a place on the school's new performing arts programme, you have to demonstrate that it means something to you. Only Masha has shown any evidence so far of being interested, so she is the only one who could possibly be offered a place.
- D** Martin will need to find a babysitter if he wants to go to Jacqueline's party. But seeing as Jacqueline's party has now been postponed, Martin won't have to struggle to get a babysitter.
- E** If Halima has not fully recovered from her illness then she will have to miss the introductory meeting on Saturday. Fortunately, her brother has notified me that she is almost back to full health already, so we can expect her to attend.

- 24** The table shows the contents of a tray of building blocks of different shapes and colours.

	<i>pillars</i>	<i>cubes</i>	<i>posts</i>	<i>arches</i>	<i>wedges</i>
blue	10	7	3	–	3
green	10	–	10	–	6
orange	10	10	–	2	–
red	10	–	–	5	–
yellow	10	5	7	2	2

Using only red, blue and yellow blocks, 30 pillars, 6 cubes, 8 posts, 7 arches and 5 wedges were removed to make a model castle.

If, among the blocks left in the tray, there were only 2 blue ones, how many yellow blocks were left in the tray?

- A** 4
- B** 5
- C** 6
- D** 7
- E** 8

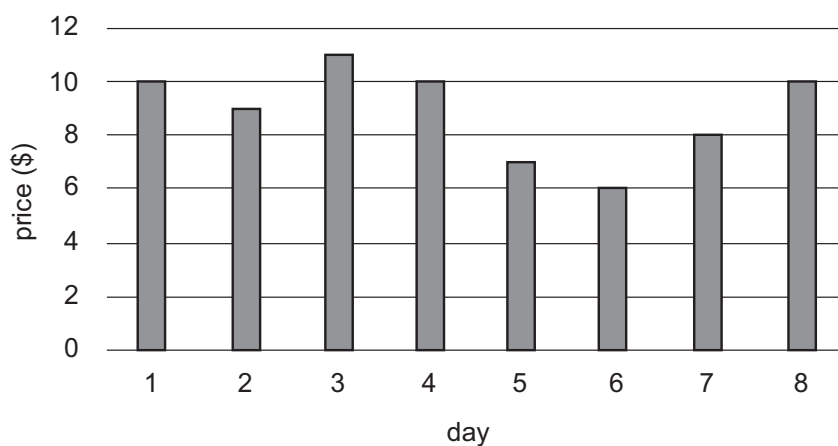
- 25** For the past 5 weeks I have been training for my first marathon race. I began with a run of 6 km. Since then I have been running regularly, though not every day. Every time I go running I run 0.5 km further than the previous time.

Last week I ran 4 times, covering a total distance of 53 km. I intend to run 4 times again this week.

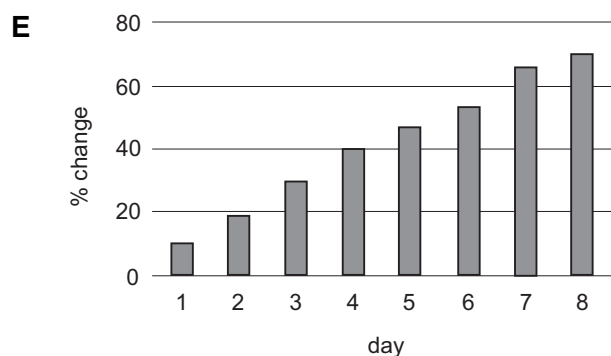
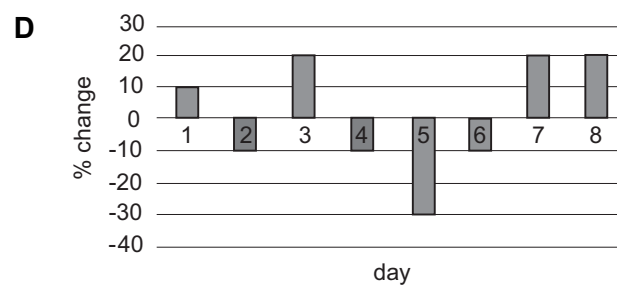
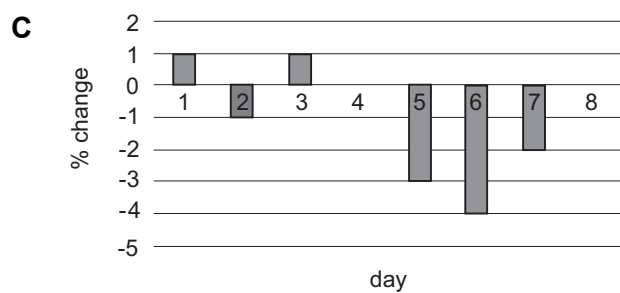
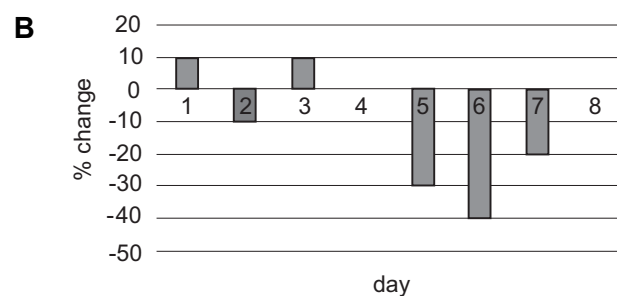
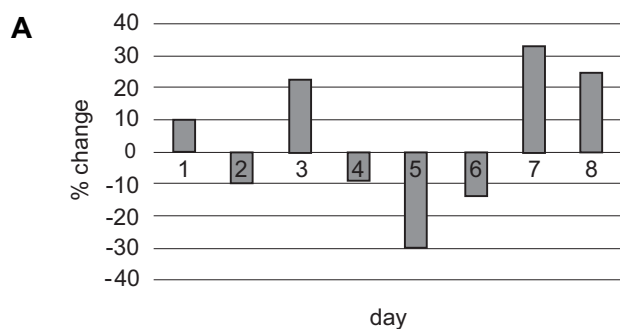
What is the total distance that I intend to run this week?

- A** 55 km
- B** 58 km
- C** 61 km
- D** 64 km
- E** 67 km

- 26 The following graph shows how the price of a particular share varied over an eight-day period:



Which one of the following graphs could show the percentage change from the previous day over the same period of time?



- 27** In some countries, if a school student has performed extremely poorly during a school year, they are held back to repeat the year instead of moving on to the next one. Although this practice is intended to be in the students' best interest, it needs to be discontinued. Those who are held back are much more likely to develop low self-esteem and engage in disruptive behaviours. In the long term, they face an increased risk of dropping out of school. This should not be surprising since simply getting students to repeat a year does not address the root causes of their low achievements, such as learning difficulties, poor health, or lack of parental support. Holding students back, then, evidently does not help to improve their academic performance.

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

- A** The practice of holding students back to repeat a school year needs to be discontinued.
 - B** Students who are held back are more likely to develop low self-esteem and engage in disruptive behaviours.
 - C** In the long term, students who are held back face an increased risk of dropping out of school.
 - D** Getting students to repeat a year does not address the root causes of their low achievements.
 - E** Holding students back evidently does not help to improve their academic performance.
- 28** At the start of every month Ralph buys some boxes of paper for his printing business. The boxes cost a whole number of dollars each and in July Ralph spent exactly \$100 on paper. In August, the price of each box had increased by \$1. Ralph only had \$100 with him. As a result the number of boxes he was able to buy was 4 fewer than in July.

In September, Ralph will need to buy the same number of boxes as he did in July.

Assuming that the price does not change again, how much will Ralph need to pay for the boxes of paper in September?

- A** \$110
- B** \$116
- C** \$120
- D** \$124
- E** \$125

- 29** Countries can face various challenges in getting their populations to unite behind government policy during health emergencies. The world's health agencies could learn from how Sierra Leone met its own challenges during a recent epidemic of Ebola, a dangerous and highly contagious disease. At the start of the epidemic, the government outlawed the activities of 'traditional' healers, who fulfil roles pertaining to funeral traditions and looking after the sick. When the disease continued to spread, officials changed course and began collaborating with these community leaders. Healers were supplied with protective clothing and trained on how to avoid catching or spreading the disease. Allowed to work again, healers helped bring the epidemic under control by referring potential cases for treatment at 'modern' medical facilities.

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

- A** Collaborating with community leaders improves how a country's government is perceived by the citizens of other countries.
- B** Collaborating with community leaders necessitates transferring some funding away from 'modern' medical facilities.
- C** Collaborating with community leaders is more effective for contagious, versus non-contagious, illnesses.
- D** Collaborating with community leaders builds trust between health officials and the general public.
- E** Collaborating with community leaders will be welcomed more by some parts of a population than others.

- 30** A cycling club runs an annual competition which is split over 10 races. In each race the winner is awarded 6 points and then the next four cyclists score 4, 3, 2 and 1 point. The final total score for each cyclist is only calculated from the 6 best results. The points scored in each of the first nine races, and the current total scores are shown in the table below.

cyclist	race										score from 6 best results
	1	2	3	4	5	6	7	8	9	10	
Alex	6	3	6	4	4	3	6		4		30
Brian		2		3				4			9
Carlos			4	2	6	2	4		3		21
David	4	6	3	6	1	6	1		2		27
Edward	3	4	2			4		6	6		25
Filip		1	1			1	3	3			9
George	2			1	3		2	2			10
Hassan	1				2			1	1		5

After the final race, the cyclist with the highest score will be the champion. If there is a tie, then the cyclist with the highest total for all races will be the champion.

If David wins the final race, what is the highest position that Alex could finish and still not be champion?

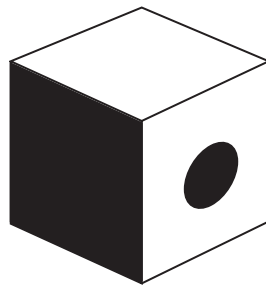
- A** 2nd
- B** 3rd
- C** 4th
- D** 5th
- E** 6th

- 31** Most doctors enter their profession because of a desire to help others. But doctors are human, too, and want their own rights to be respected. For this reason, doctors sometimes go on strike, withdrawing their labour as a means of demanding changes to unfair pay or unsafe working conditions. Yet even if their reasons are valid, doctors must find another way to protest. By refusing to work, striking doctors put at risk the patients they have pledged to look after, and therefore, their actions cannot be justified. As the saying goes, the ends can't justify the means. And this is indeed the case when it comes to the behaviour of individuals in positions of responsibility in relation to others, even when those individuals are morally in the right.

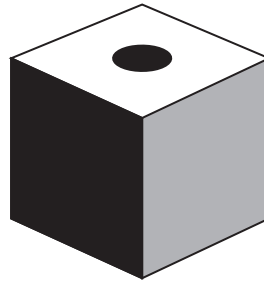
Which one of the following best illustrates the principle used in the above argument?

- A** Government officials shouldn't silence citizens even if they embarrass the ruling political parties with their critical remarks.
- B** Scientists shouldn't profit personally from the discoveries they make.
- C** Police shouldn't harm suspects in criminal investigations in order to force them to tell the truth.
- D** Employers shouldn't offer financial bonuses to staff for completing unpleasant tasks.
- E** Journalists shouldn't hold back information on an important story even if someone might be hurt by it becoming public.

32 Here are two views of the same cube in different orientations.



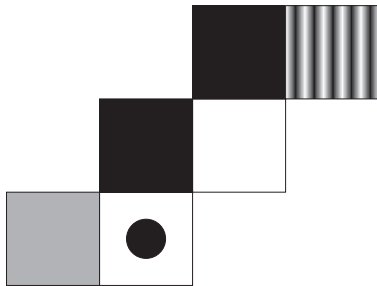
View 1



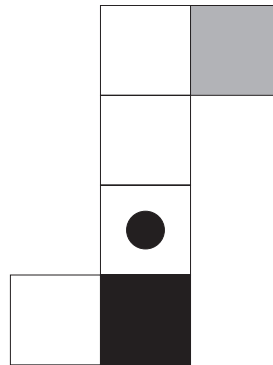
View 2

Which one of the nets below **cannot** make the cube above?

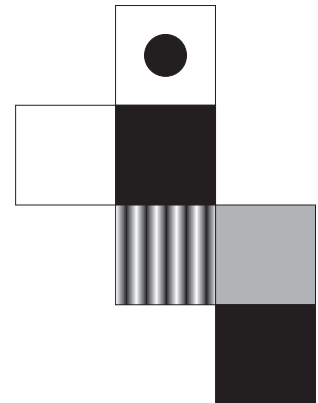
A



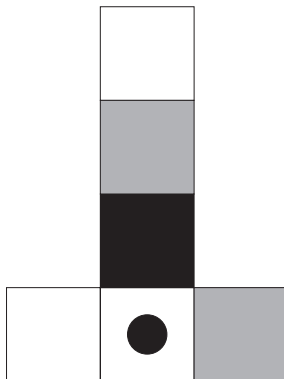
B



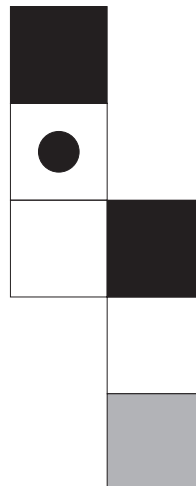
C



D



E



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