



Student application
number

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Given name(s)

Family name

Selective High School Placement Test

Thinking Skills Question Paper

SAMPLE TEST

40 minutes

INSTRUCTIONS FOR CANDIDATES

Please read this page carefully.

DO NOT OPEN THIS QUESTION PAPER UNTIL YOU ARE TOLD TO DO SO.

A separate answer sheet is provided for this test. Please fill in the following information on your answer sheet:

- Student application number
- Given name(s)
- Family name

There are **40** questions in this paper. For each question there are four possible answers, **A, B, C,** and **D**. Choose the **one** correct answer and record your choice on the separate answer sheet. If you make a mistake, erase thoroughly and try again.

You will **not** lose marks for incorrect answers, so you should attempt **all 40** questions.

You **must** complete the answer sheet within the time limit. There will **not** be any extra time at the end of the exam to record your answers on the answer sheet.

You can use the question paper for working out, but no extra paper is allowed.

Calculators and dictionaries are **NOT** allowed.



Cambridge Assessment
Admissions Testing

PV1

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1 Kai, Joe and Alice have 30 marbles each.

They take it in turns to roll a dice.

- If the number rolled is even, then that player has to give the number of marbles shown on the face of the dice to each of the other two players.
- If the number rolled is odd, then that player receives the number of marbles shown on the face of the dice from each of the other two players.

Kai rolls a 5.

Joe rolls a 2.

If the friends end up with 41, 20 and 29 marbles respectively, which number does Alice roll?

- A 1
- B 2
- C 3
- D 4

2 When Tom told Aida that he was thinking of giving up his hobby of drawing to focus on becoming an engineer, Aida said: "You don't need to give up a hobby like drawing just because you want to work in engineering. It's good for you to have hobbies. They help keep you happy and relaxed so you can also study harder."

Which one of these statements, if true, most **strengthens** Aida's argument?

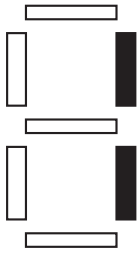
- A Artistic or creative skills are seen as important skills for engineers to have.
- B Tom's latest school report said that he wasn't studying hard enough.
- C Tom's school encourages its students to have at least one hobby.
- D Learning to draw well also often takes hard work and concentration.

3 “Whoever stole the money must have had both an opportunity and a motive.”

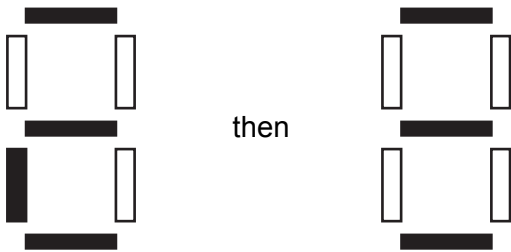
If this is true, which one of these sentences must also be true?

- A** If Finn had both an opportunity and a motive, he must have stolen the money.
- B** If Finn did not steal the money, he cannot have had an opportunity.
- C** If Finn did not steal the money, he cannot have had a motive.
- D** If Finn did not have a motive, he cannot have stolen the money.

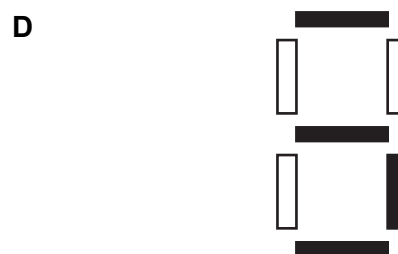
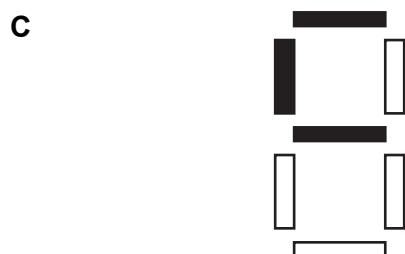
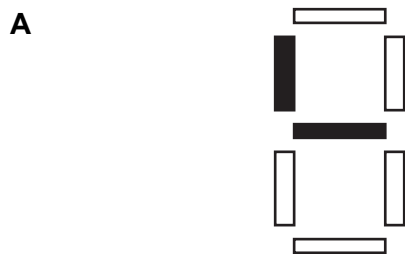
- 4 A digital display consists of seven segments which light up in different combinations to produce digits. For example, to display the digit '1' the two right-hand segments normally light up as shown:



The display is used to show, in sequence, each of the digits 0 to 9. However, the display is faulty and two of the segments are not working. Two of the digits in the sequence are displayed as follows:



What is the next number in the sequence, as shown by the faulty display?



- 5 At the end of each term, Mr Chen gives scores in reading and writing to each student in his English class. These two scores are then added together to give an overall score in English for the term (for example, a student with scores of 30 in reading and 40 in writing would have an overall score of 70 in English).

Last term, Sara and Mila got the same overall score in English.



Sara: “If our scores in writing were different from each other, then our scores in reading must have been different too.”

Mila: “And if our scores in reading were the same, then our scores in writing must have been the same too.”

If the information in the box is true, whose reasoning is correct?

- A Sara only
 - B Mila only
 - C Both Sara and Mila
 - D Neither Sara nor Mila
- 6 The children Anita, Brian, Eric, Lee and Zara are all in one family. Lee is 1 year younger than Eric. Brian and Eric are twins. Anita is 3 years older than Lee. Brian is 8 years old. Zara is older than Eric, but younger than Anita.

Only one of the following sentences is true. Which is it?

- A Eric is 11.
- B Anita is 2 years older than Zara.
- C All the children are 8 or older.
- D Anita is 10.

- 7 A farmer has 245 female goats.
This year all but 9 of them have had kids.
None of them have had more than two kids.
357 kids have been born in total.
How many of the goats have had one kid only?

- A 115
- B 121
- C 124
- D 133

- 8 Sanjay said that wind farms will not meet all our energy needs as the demand for electricity grows, because we cannot rely on a source that varies with the weather. We need power 24 hours a day, 7 days a week, which is why the construction of wind turbines, with their uneven output, is not the solution.



Which one of these statements, if true, most **strengthens** Sanjay's argument?

- A Scientists have found that global average wind speeds are increasing.
- B There is no practical way to store the energy generated by wind turbines.
- C Local residents often complain about wind turbines spoiling the landscape.
- D A single wind turbine can generate the same energy as a thousand solar panels.

9

In the Junior Golf Championship, prizes are given out to the players who finish first, second, and third, and to anyone who gets a hole-in-one.



Sam: “Well, I know that one player scored a hole-in-one this year. So that means that four players will get prizes.”

Which one of the following sentences shows the mistake Sam has made?

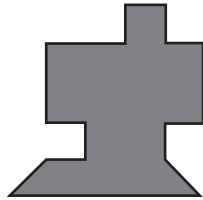
- A** Some players might deserve a prize even if they didn’t score a hole-in-one.
- B** The hole-in-one might have been scored by a player who finished first, second, or third.
- C** Younger players might find it difficult to score a hole-in-one.
- D** We do not know the total number of players in the competition.

10 Shown below are the three small pieces of a puzzle.

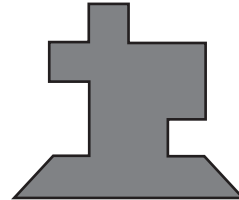


Which one of the following big pieces can be combined with the three small pieces to make a square?

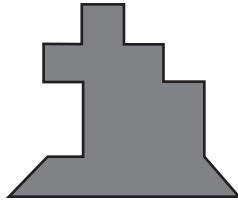
A



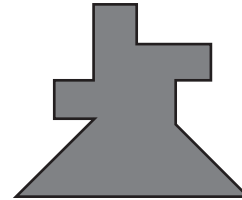
B



C



D



11

To become a successful architect, you need to be creative and also have excellent attention to detail.



Will: “Sally is creative – she loves drawing and painting – and always checks her written work carefully. She’s sure to become a great architect.”

Evie: “James enjoys writing stories and has a vivid imagination, but he struggles with detailed tasks. Architecture is probably not for him.”

If the information in the box is true, whose reasoning is correct?

- A Will only
- B Evie only
- C Both Will and Evie
- D Neither Will nor Evie

12

Five houses stand together in a row. One person lives in each house; each person likes a different sport; they all use different forms of transport. We also know that:

- Mr Green likes tennis and lives next to Ms White, who is on the left end of the row and drives a van.
- Dr Grey uses a taxi.
- The person who likes badminton lives in the middle of the row.
- Miss Orange drives a car and doesn’t like swimming.
- The person who likes swimming does not have a motorcycle.
- Mrs Black likes football; she lives next to Miss Orange and two houses from Dr Grey.
- The person who rides a bicycle also likes football.
- The person who likes golf lives next to the person who likes badminton.

Using the information above, who lives in the last house on the right of the row?

- A Dr Grey
- B Miss Orange
- C Mrs Black
- D Mr Green

- 13 Twelve students are studying Mathematics. They take three tests, each marked out of 100.

The results of the first two tests taken are shown below.

	<i>test 1</i>	<i>test 2</i>
Tom	48	53
James	83	86
Alira	61	67
Connor	73	54
Edward	66	59
Heidi	69	78
Jo	33	98
Kai	88	44
Sarah	100	53
Piper	75	78
Layla	81	79
Isabelle	57	65

A prize is awarded to the student with the highest combined total score from the three tests. If two students are tied for the highest score, nobody gets the prize.

As the scores currently stand, one student is able to be sure to win this prize as long as a high enough score is achieved in the final test.

What is the minimum score in the final test that will guarantee this student the prize?

- A 92
- B 94
- C 96
- D 98

- 14 Anh's mother has written a letter to the school. She has suggested that, for the children's safety, cars should be banned from the roads around the school at the beginning and end of the day, as there is a high risk of a child being involved in an accident.

Which one of these statements, if true, most **strengthens** Anh's mother's argument?

- A Parents who go to work after taking children to school may be late if they have to walk with their children to school.
- B When people cannot find a place to park they can get very bad-tempered.
- C Exhaust fumes from cars are invisible but very harmful to children.
- D People who live close to the school have complained about the noise at the beginning and end of the school day.

15

Ferdinand has an atlas which he can use to look up any city in the world.

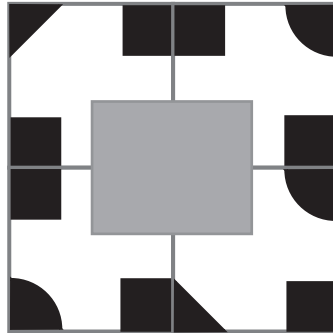


Ferdinand: “If you tell me the name of a city, you don’t need to tell me which country it’s in – I can look it up in my atlas.”

Which one of the following sentences shows the mistake Ferdinand has made?

- A There are some cities which have the same name as the country they are in.
- B There are some cities which have the same name as each other.
- C There are some countries which do not have any cities at all.
- D There are some cities that have changed their name.

- 16 I have used 4 identical tiles to make a pattern on the floor. There is a grey rectangle on top of the tiles so that only part of the pattern is visible.



Using the same orientation as the diagram above, what is the pattern that is covered by the grey rectangle?



- 17 Jun's school was selecting students for a new course in computer programming. As well as considering their existing knowledge of computer programming, the school set them a maths test and a chess challenge.

If a student had at least some existing knowledge of programming, then they only had to pass the maths test. If they had none, then they either needed to get an excellent score on the maths test, or do well in both the maths test and the chess challenge.

Jun is an experienced computer programmer but failed to get a place on the course. What must have been the reason?

- A He did badly in the chess challenge.
- B He did not get an excellent score in maths.
- C He failed his maths test.
- D He did badly in both maths and chess.

- 18 Monotremes are the only type of mammal that lay eggs.



Jack: “If you see a mammal laying an egg, you know it must be a monotreme.”

Amelia: “And if you see an animal laying an egg, and you know it isn’t a monotreme, then it can’t be a mammal.”

If the information in the box is true, whose reasoning is correct?

- A Jack only
 - B Amelia only
 - C Both Jack and Amelia
 - D Neither Jack nor Amelia
- 19 The prices for passes for a tourist bus are shown in the table below.

<i>pass for 1 day</i>	<i>pass for 4 consecutive days</i>	<i>pass for 7 consecutive days</i>
\$5	\$10	\$20

I will need a pass on the following days of the month: 2, 3, 4, 6, 10, 11, 12, 14, 15, 16.

How much is the cheapest valid combination I could use?

- A \$30
- B \$35
- C \$40
- D \$45

- 20** There are some countries in the world where a high birth rate is a major worry, especially when the country is less economically developed, and resources to feed and care for children are scarce. But in other countries, the opposite is the case. The birth rate in several rich countries is falling, at the same time as older people there are living longer. This will become a problem as time goes on, because there will be far more old people who need looking after, but far fewer younger people to do that. By allowing birth rates to fall so much, these countries are storing up a problem for the future.

Which of these statements, if true, most **strengthens** the above argument?

- A** Parents who have fewer children can devote more time and energy to the children they do have.
 - B** Older people have much greater health needs, especially when they are over 85.
 - C** Older people do not always want to be dependent on their children and grandchildren.
 - D** Young people should see care of their parents and grandparents as their duty.
- 21** If Monti does not sleep well, then he's likely to be tired.

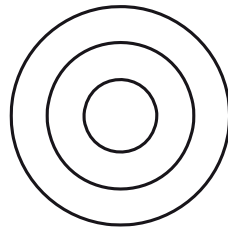
If he is tired, then he will not perform well at the interview.

If he performs well at the interview, then he might be offered the job. Otherwise he doesn't stand a chance.

If the above statements are correct, which one of the following is **not** possible?

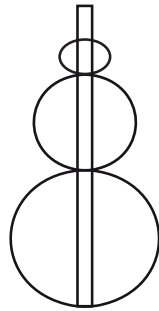
- A** Monti did not sleep well but got the job.
- B** Monti slept well but did not get the job.
- C** Monti performed well at interview but did not get offered the job.
- D** Monti was tired at the interview but still did well enough to get the job.

22 When viewed from above, an object looks like the picture shown below:

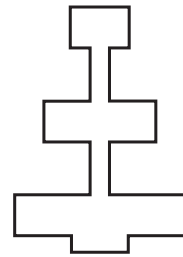


Which one of the following is a possible view from the side?

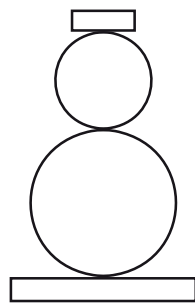
A



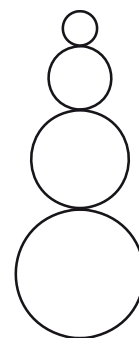
B



C



D



23

Jarrah's music teacher has promised that any students who did not have a chance to perform in the Spring concert will definitely be chosen to play in the Autumn concert.



Jarrah: "Well, I did perform in the Spring concert. So that means I definitely won't be chosen for Autumn. I'll have to find something else to do."

Which one of the following sentences shows the mistake Jarrah has made?

- A Just because anyone who did not play in Spring will play in Autumn, it does not mean that anyone who played in Spring will not play in Autumn.
- B Just because somebody is chosen for the concert, it does not mean they will actually perform.
- C Just because Jarrah was chosen to perform at a concert in the past, it does not mean he will be chosen again in future.
- D Just because someone did not perform in the Spring concert, it does not mean that they would not have liked to.

24 In a survey of television viewers, everyone who liked volleyball liked skiing. Everyone who liked skiing liked cycling, but no one who liked skiing liked gymnastics.

Darren, Amanda, Lee and Jess all took part in the survey.

Based on the above information, which one of the following must be true?

- A If Darren likes cycling, he also likes skiing.
- B If Amanda does not like gymnastics, she does not like cycling.
- C If Lee does not like volleyball, he does not like skiing.
- D If Jess likes volleyball, she does not like gymnastics.

- 25 A band is performing at the local park. The first performance will be on Saturday 1st August and the final performance will be on 31st August. There will be two performances on every Monday and every Tuesday, no performances on 22nd August and 23rd August, and one performance on each of the other days.

How many performances will there be altogether?

- A 38
- B 39
- C 40
- D 41

- 26 Why is it that Brazil has produced such successful soccer teams, and so many brilliant players? One theory is that it is because Brazil has a lot of very poor areas, and so people are just desperate to leave the 'favelas' (slums), and that becoming a professional soccer player is a good way to do this. But a better explanation is the unique popularity in Brazil of a game called futsal. Futsal is played with a smaller ball that is more difficult to control, and in smaller spaces where people have to think faster and be more accurate with their passing. As former soccer superstar Ronaldinho said, "When you come to play soccer, it's easy if you've come from futsal."

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

- A Ronaldinho played futsal extensively before turning to soccer.
- B Ronaldinho is not the only successful soccer player from Brazil to have started by playing futsal.
- C Some coaches in other countries also believe that futsal is the best way to improve soccer skills.
- D There are many other countries that have areas as poor as Brazil that have not had the same success in soccer.

27

Whenever the red light on the side of Yifan's computer is flashing on and off, it means that the processor is starting to overheat.



Yifan: “The red light isn't flashing at the moment, so the temperature of the processor must be fine.”

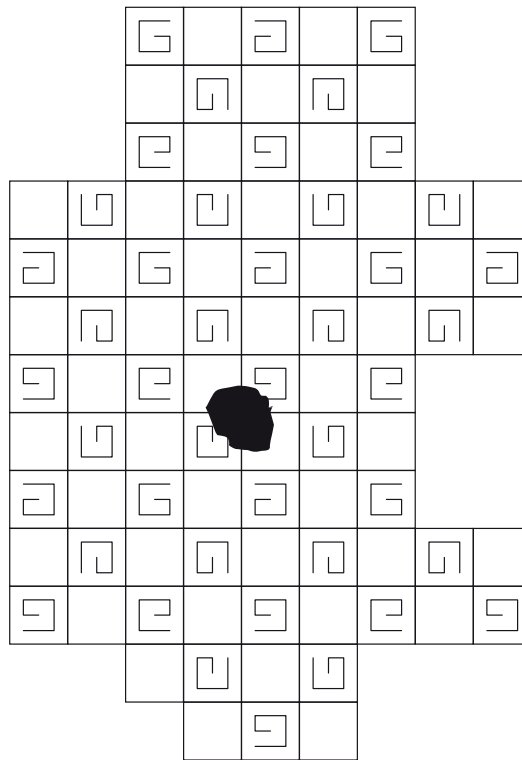
Ria: “No, that's not right. The light is on continuously – that must mean that the processor has already overheated!”

If the information in the box is true, whose reasoning is correct?

- A Yifan only
- B Ria only
- C Both Yifan and Ria
- D Neither Yifan nor Ria

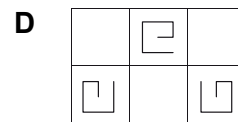
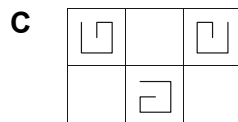
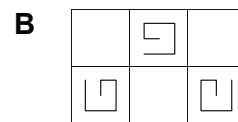
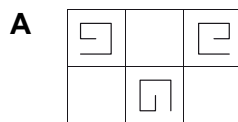
- 28 Earlier today I spilt some ink onto the carpet of my living room, and I have had no success trying to remove the stain.

This is how the carpet looks at present:



Fortunately I have some offcuts from when the carpet was laid, and I have discovered that if I carefully cut out an appropriately sized piece of the carpet around the stain, one of the offcuts will fit into the space exactly without disrupting the pattern.

Which one of my offcuts can I use to replace the stained piece?



29 Five children did a test with five difficult questions to answer.

- Hailey was faster than Gabriella, but got three questions wrong.
- Adam got all the questions right, but took the longest.
- Natalie finished second, but got two questions wrong.
- Gabriella got more questions right than Natalie, but finished after her.
- Kamilla wasn't as fast as Natalie, but Natalie was not as fast as Hailey.

If all the above statements are true, only one of the sentences below **cannot** be true. Which one?

- A Gabriella got fewer questions right than Adam.
- B Hailey was faster than Kamilla.
- C Hailey was not first to finish.
- D Hailey got fewest questions right.

30 An advertisement for stain remover claimed:

STAIN-GONE never fails to remove a stain.

Four stained items of clothing were washed, and two questions were asked in each case:

<i>item</i>	<i>Was STAIN-GONE used in the wash?</i>	<i>Was the stain removed?</i>
1	yes	(a)
2	(b)	yes
3	no	(c)
4	(d)	no

Which **two** of the missing answers **must** be known in order to test the truth of the claim in the advertisement?

- A a and b
- B b and d
- C a and d
- D c and d

- 31 Alana wants to buy 4 books. There are 4 shops that sell the books that she wants. The shops, the prices of the books and any special offers are shown in the following table:

	<i>standard price of a book</i>	<i>special offer</i>
shop A	\$24	buy 2, get a 3rd one for half price
shop B	\$20	none
shop C	\$26	buy 3, get a 4th one free
shop D	\$25	buy 1, get a 2nd one for half price

Alana wants to buy all her books from the same shop and to spend as little as possible.

Which shop should Alana buy her books from?

- A shop A
 - B shop B
 - C shop C
 - D shop D
- 32 It's quite common to hear celebrities and politicians boasting about how little they sleep. They like to create the impression that their success and achievement come from their giving up sleep to work exceptionally long hours. But the truth is that success and sleep go hand in hand. A group of Spanish psychologists have interviewed a wide range of successful people over the last 30 years and have found that most of them credit their achievements to plenty of rest and sleep. Far from being an obstacle to a great life, sleep in fact seems to underpin it!

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

- A Average working hours have increased over the last ten years.
- B People are as honest when interviewed by the press as when they are interviewed by researchers.
- C Many people view public figures like celebrities and politicians as role models.
- D Getting less than seven hours of sleep can reduce people's ability to make good decisions.

33 Brook and Joyce wanted to find out which was the most popular traditional game at their school: Wulijini, Buroinjin, Koolchee or Keentan. They did a survey of all the students at the school, and found the following:

- Everyone who liked Wulijini also liked Koolchee.
- Some people liked both Koolchee and Buroinjin.
- No one liked both Buroinjin and Wulijini.
- There were more people who only liked Koolchee than people who only liked Buroinjin.
- All the Keentan fans were also fans of Wulijini.

Which was the most popular game?

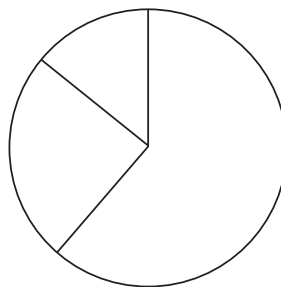
- A** Wulijini
- B** Koolchee
- C** Buroinjin
- D** Keentan

34 150 people were asked to name their favourite type of movie. The results were as follows:

fantasy	66
comedy	42
romance	27
horror	15

No other types of movie were chosen.

The information was entered into a computer in order to construct a pie chart. However, one of the types of movie was missed out. As a result, this was the pie chart that appeared on the screen.



Which type of movie was missed out?

- A** fantasy
- B** comedy
- C** romance
- D** horror

- 35 What is the point in spending time and effort learning things when you can just look them up on the internet? Even doctors these days now find themselves using Google when they want to try to decide what is wrong with a patient. Was it really necessary for them to have spent years studying science and medicine, when the information can now be found online in an instant? As technology progresses, and as more and more people have access to the internet, it surely becomes more and more of a waste of time gaining knowledge. Memorising facts should become a thing of the past.

Which one of these statements, if true, most **weakens** the above argument?

- A Some doctors do not use the internet to assist them with their work.
- B There is more information on the internet than any one human would be able to memorise.
- C People need some existing knowledge in order to make sense of information they find online.
- D In many jobs, practical skills are more valuable than knowing a lot of facts.
- 36 I am hiding in one of three rooms. On the door of each room I have written two statements, some true, some false. However, no more than one statement on each door is false.

<i>Room 1</i>	<i>Room 2</i>	<i>Room 3</i>
My name is Aziz	I am not in this room	My name is Luisa
I am not in this room	I am in Room 3	I am not in Room 1

Which one of the following statements must be true?

- A My name is Aziz.
- B I'm in Room 1.
- C I'm in Room 3.
- D My name is Luisa.

- 37 Yesterday, in the dog park, I saw 8 dog owners exercising their dogs.
Some of the dog owners had 1 dog, and some dog owners had 2 dogs.
Counting the legs of the dogs and the legs of the dog owners, there was a total of 60 legs.
All dogs have 4 legs and all dog owners have 2 legs.
How many dog owners had only 1 dog?
- A 3
 - B 4
 - C 5
 - D 6

- 38 There are two ways to qualify for the annual Grant County Athletics Championship: by winning at least three local events during the year, or by breaking a county record.
This year, 10 students from Lisa's school have qualified for the Championship.



Lisa: "I know that a total of six county records were broken by our students this year. So that means that more than half of our qualifiers must be record-breakers!"

Which one of the following sentences shows the mistake Lisa has made?

- A Some of the students from Lisa's school may have broken more than one county record.
- B Some county records may have been broken more than once.
- C The number of county records broken this year may be higher than usual.
- D Some students who broke county records may also have won three local events or more.

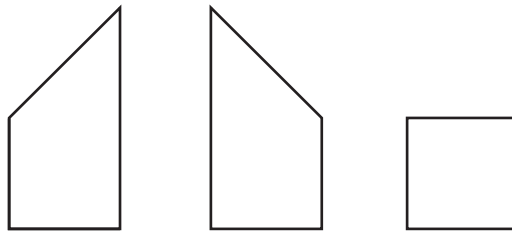
39 Muhammad's school wanted to find out how different sports affected people's fitness levels. They made all the best sports people take a fitness test. This is what they found:

- The fittest runners were fitter than the fittest swimmers.
- All the gymnasts were fitter than most of the runners.
- All the swimmers were fitter than all the gymnasts.

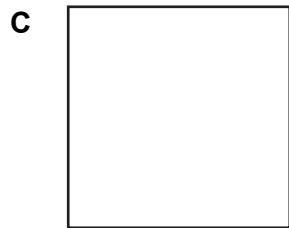
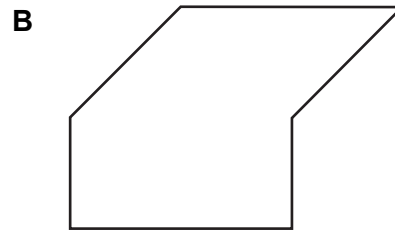
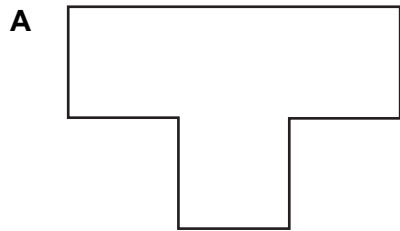
Which one of these sentences can be concluded from the above information?

- A** The swimmers' average fitness level was better than those of the other groups.
- B** The range of fitness levels was the greatest amongst the runners.
- C** Runners and swimmers will generally be fitter than gymnasts.
- D** There was less of a range of fitness levels amongst the gymnasts than amongst the swimmers.

40 Three different shapes are shown below.



Which one of the following arrangements **cannot** be made by putting these three shapes together?



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