

# PASSED★PAPERS

## CAT4

### Sample Test



Ask **ROB** (expert test developer) your questions by emailing [passedpapers@gmail.com](mailto:passedpapers@gmail.com)

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Rob has worked for the school entrance test publishers ISEB and GL – as well as the leading global psychometric test publishers including SHL, Kenexa IBM, MBTI, CAPP and SOVA Assessment.

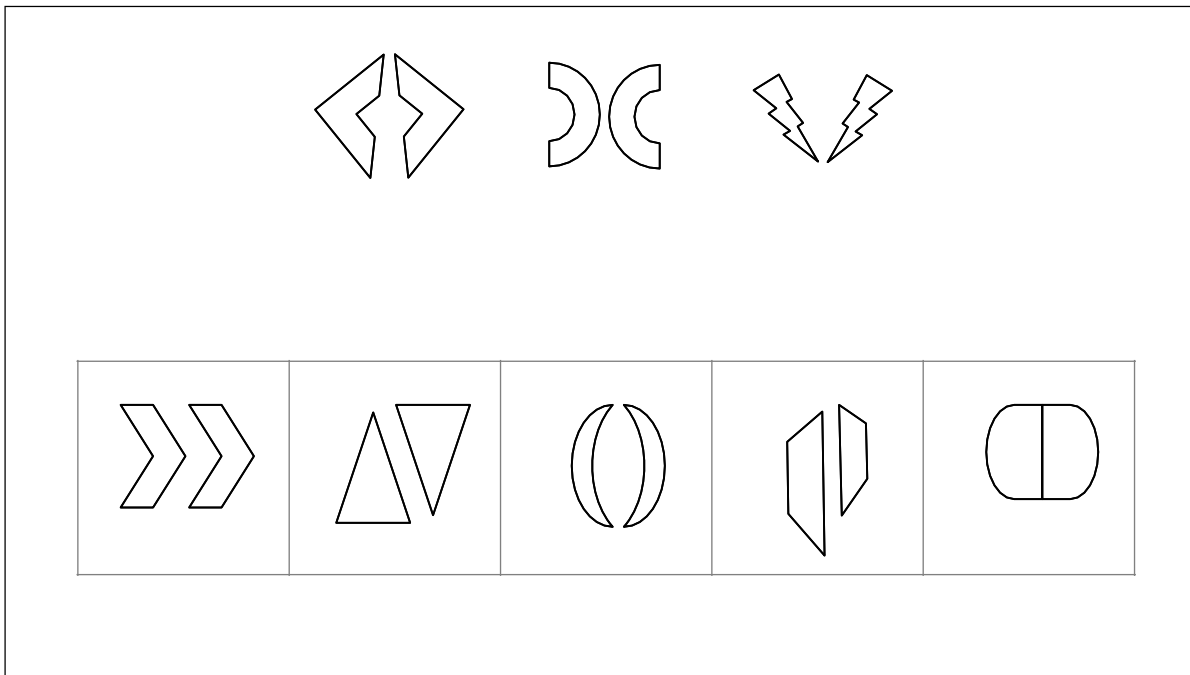


Part 1

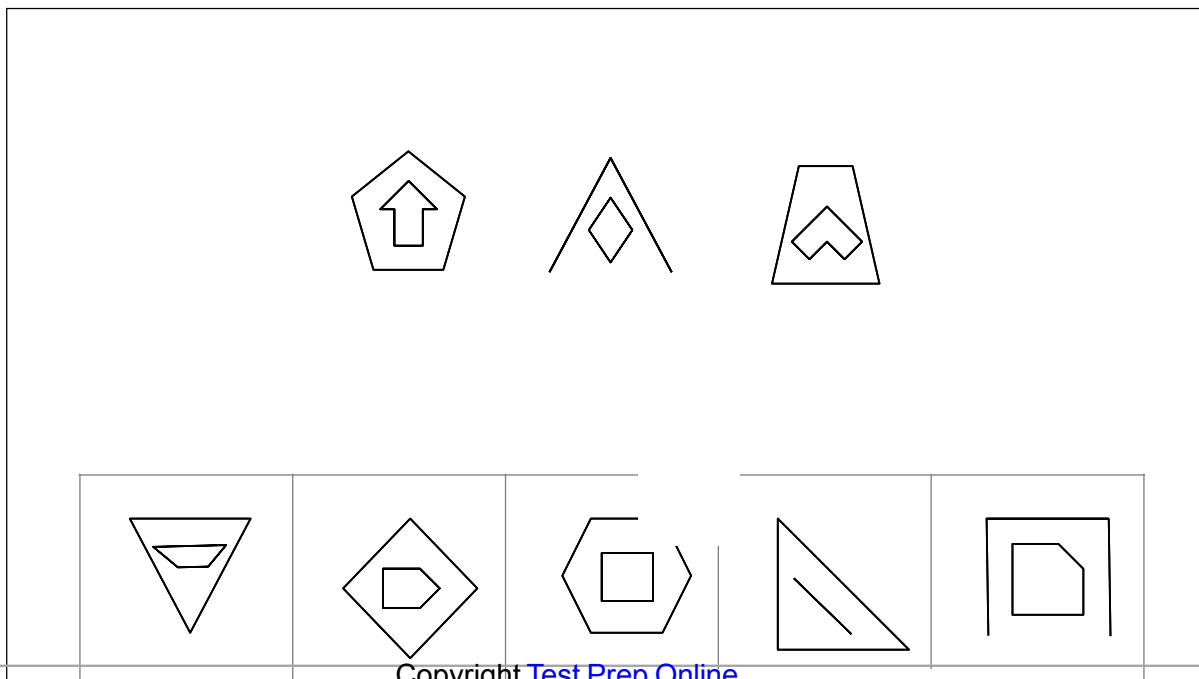
**Figure Classification:**

The Figure Classification questions show three pictures that share a connection or a characteristic. From the answer choices, choose the answer which shares the same connection/characteristic.

Sample Question 1



Sample Question 2













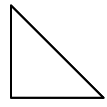
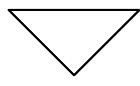
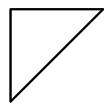
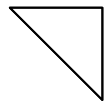
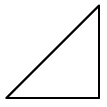




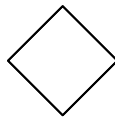








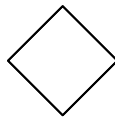








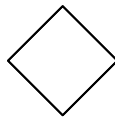










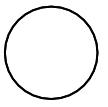


**Figure Matrices:**

Figure Matrix questions are either 2x2 or 3x3 matrices, comprised of different pictures. In each row and/or column the pictures change in the same way or follow the same rule. Choose an answer choice that goes in the empty box in the matrix that follows the same rule.

Sample Question 3

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Sample Question 4

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## Part 2

### Verbal Classification:

Verbal Classification questions provide three words that are alike in some way. The correct answer is the word which is like the other three words.

#### Sample Question 5

**polar bear milk snow**

zebra   cloud   panda   apple   lion

#### Sample Question 6

**saddle bridle horseshoe**

galloping   animal   horse   harness   helmet

### Verbal Analogies:

Verbal Analogies questions provide a pair of words that go together in a certain way and a third word. Choose a word from the answer choices that go together with the third word in the same way.

#### Sample Question 7

**dog → puppy horse →**

pony   foal   stallion   cat   hoo

#### Sample Question 8

**quill → pen telegram →**

television   progra   emai   messag   ink

**Number Analogies:**

Number Analogies questions provide two pairs of numbers with a certain mathematical connection and another number that shares that connection with one of the answer choices. Find the missing number in the third pair.

Sample Question 9

[15 → 50] [10 → 35] [7 → ?]

21     22     25     26     27

Sample Question 10

[12 → 5] [15 → 6] [18 → ?]

9     8     7     6     5

**Part 3**

**Number Series:**

Number Series questions provide a series of numbers that have a rule. Use the rule to determine which number will come next in the series.

Sample Question 11

9 11 7 9 5 7 ?

8     6     4     3     2

Sample Question 12

5 8 9 11 13?

14     15     16     17     18

**Figure Analysis:**

Figure Analysis questions present a paper folded several times and then punched with holes. The answer choices contain unfolded papers with punched-in holes. You need to determine which of the answer choices is the final product of the unfolded punched-in paper.

Sample Question 13

1                      2                      3                      4                      5

Sample Question 14

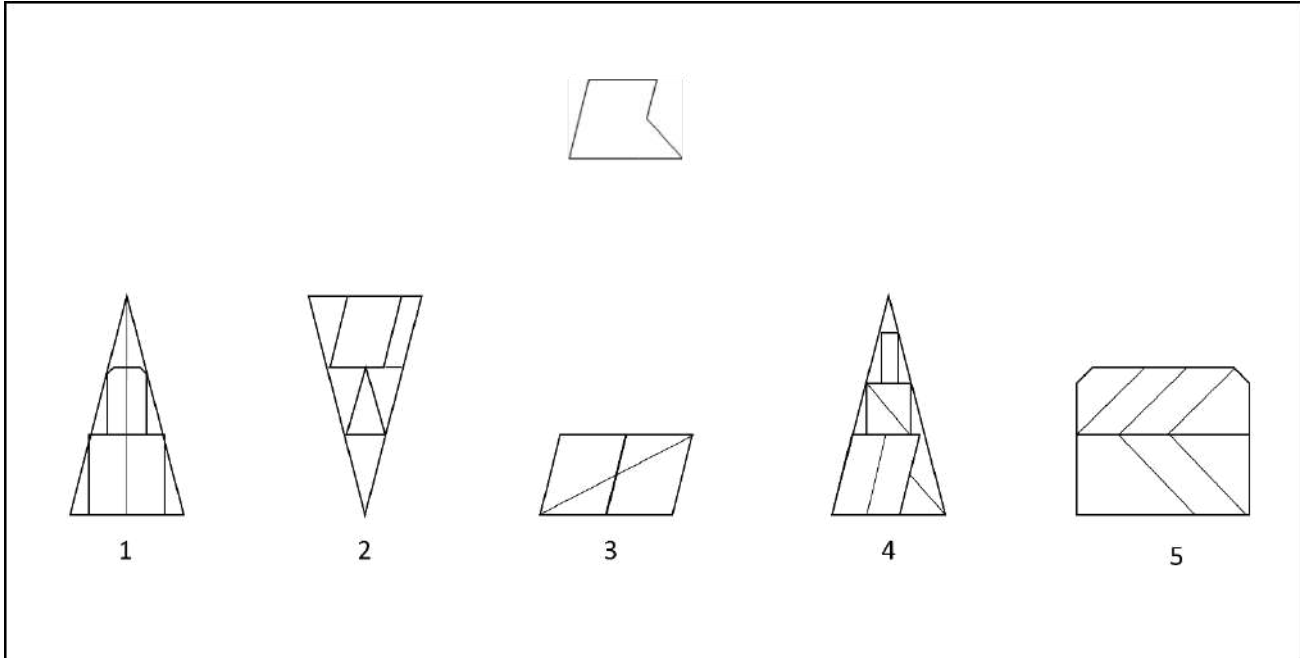
1                      2                      3                      4                      5



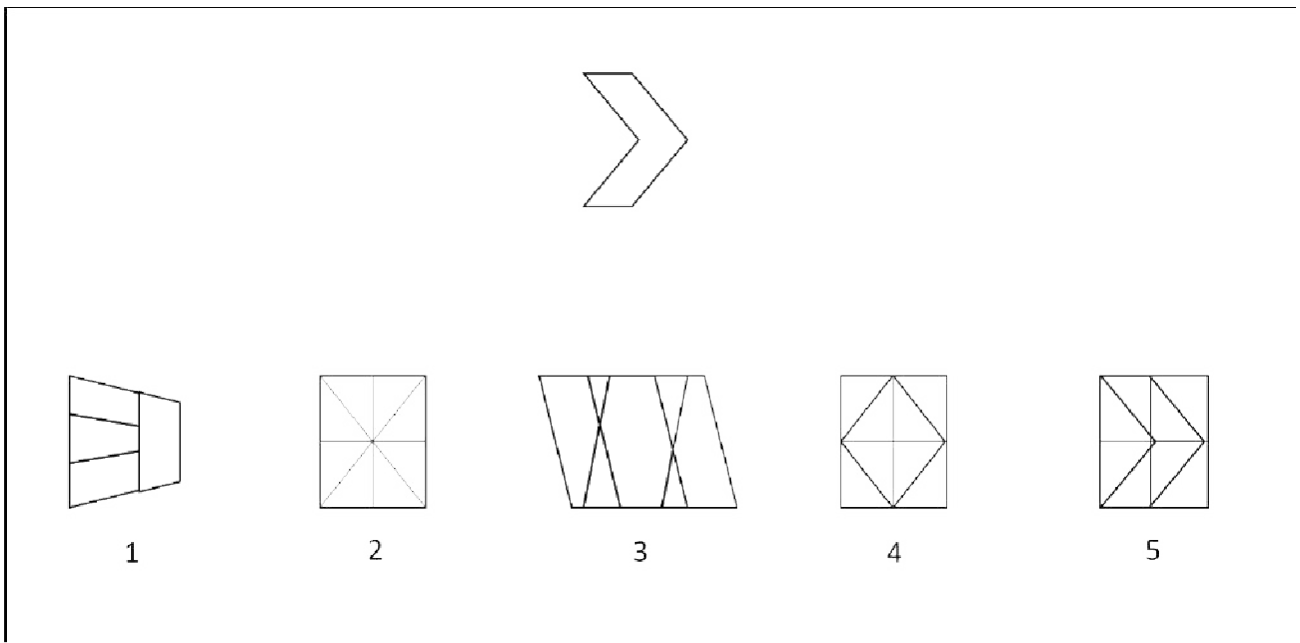
**Figure Recognition:**

Figure Recognition questions present a shape alongside five answer choices containing complex designs. You must choose the design which contains the target shape in the exact same size and orientation.

Sample Question 15



Sample Question 16



## Solution and Explanations

### Sample Question 1

**The correct answer is 3.**

All pictures consist of two identical figures mirroring one another horizontally. The only choice that follows that pattern is 3.

Answer 1 contains two identical figures with the same orientation (no mirroring).

In answer 2, the figures do not mirror one another – just an upside-down copy of one another. In answer 4, the figures are different in size.

In answer 5, the figures touch each other and share a side – in contrast to all three pictures in the question.

### Sample Question 2

**The correct answer is 5.**

In this question, the pattern is as follows:

- Each picture contains one small figure inside of a bigger figure.
- The internal figure is comprised of two lines more than the external figure.
- For example, in the left picture, the external figure (a pentagon) is comprised of five lines, and therefore, the internal figure (the arrow) is comprised of seven lines.

Answers 1 and 2 are incorrect because the internal figures inside of them are comprised of only one (instead of two) more line than the external figures.

Answers 3 and 4 are incorrect because the internal figures inside of them are comprised of fewer (instead of more) lines than the external figures.

We are left with the 5th choice as the only possible correct answer, and it is correct because the external figure is comprised of three lines, and therefore, the internal figure is comprised of five lines (exactly two more lines).

### Sample Question 3

**The correct answer is 5.**

In this question, in the top row, from left to right, the figure rotates 90° counterclockwise and changes from white to black.

Therefore, for the second row, the figure on the left should rotate 90° counterclockwise and change from black to white.

Hence, the **5th** choice is the correct answer.

Sample Question 4

**The correct Answer is 1.**

In this question, the pictures consist of a varying number of small triangles inside a large varying figure. There are two different patterns, one for the large figures and one for the small triangles. The pattern for the large figures is that they move along one space, to the left as you look down the

rows, or upwards if you look across the columns. Notice that each row and each column include exactly one of each figure: one heart, one circle, and one diamond-shaped square.

The pattern for the small triangles is as follows: across the rows from left to right, or down the columns from top to bottom, in the third picture (the right or the bottom), the number of triangles is the sum of the number of triangles in the first two pictures. That means that for the missing picture, four triangles should be in it, meaning that the only possible choice is answer 1, which is the correct answer.

Based on the large figures pattern, the missing picture should be a large circle, thus eliminating answers 2 and 4.

Based on the small triangles pattern, the number of triangles in the missing picture should be four, thus eliminating answers 3 and 5.

The only remaining possible answer is the **1st** choice, and therefore the correct answer as it matches the two patterns.

Sample Question 5

**The correct answer is *cloud*.**

All words describe things that are usually coloured only in a white color. *zebra* and *panda* are incorrect because they are coloured in black and white. *apple* and *lion* are incorrect because they do not have a white colour.

Sample Question 6

**The correct answer is *harness*.**

All words describe equestrian (horse related) objects that are placed on the horse itself.

*galloping* is incorrect because it is an action the horse does.

*animals* is incorrect because it is a general term the includes horses in it.

*horse* is incorrect because it is not an object that has to do with horses, it is a horse itself.

*helmet* is incorrect because someone who rides a horse puts a helmet on and not the horse itself. All the other items are placed on the horse itself.

Sample Question 7

The correct answer is **foal**.

A **puppy** is a baby **dog** just like a **foal** is a baby **horse**.

**pony** is incorrect because it refers to a type of horse that is small, but not a baby horse.

**stallion** is incorrect because it is an adult male, ungelded

horse. **cat** is incorrect because it is a different animal than a

horse. **hoof** is incorrect because it is a body part of a horse.

Sample Question 8

The correct answer is **email**.

**quill** was used in the past for the same purpose we use **pen** today (writing things), like **telegram** was used in the past for the same purpose we use **email** today (conveying messages).

**television**, **program**, and **ink** are all incorrect since they do not serve the same purpose as telegram.

**message** is incorrect since it is not a modern version of telegram, but rather the content of the telegram.

Sample Question 9

The correct answer is **26**.

The ~~simple possible~~ connection between the numbers in the first pair (15 → 50) is:  $15 + 35 = 50$ .

However, the second pair (10 → 35) does not share that same connection, as:

$10 + 35 \neq 35$  (notice that the difference is 25:  $10 + 25 = 35$ )

Therefore, there must be a more complex connection.

Since 50 is not divisible by 15, a possible connection would be one made from multiplication and addition/subtraction. Some of the possibilities are:

$15 \times 2 + 20 = 50$  /  $15 \times 3 + 5 = 50$  /  $15 \times 4 - 10 = 50$ .

More connections can be written; however, you should try the simple ones

first. Checking those connections on the second pair yields:

$10 \times 2 + 20 = 40 \neq 35$  /  $10 \times 3 + 5 = 35$  /  $10 \times 4 - 10 = 30 \neq 35$ .

The connection which applies for both pairs is the second one, which is:  $X \times 3 + 5$ , where X is the number on the left side of the pair.

Therefore, the correct answer is  $7 \times 3 + 5 = \mathbf{26}$ .

Sample Question 10**The correct answer is 7.**

Look at the numbers in the first pair and try to find the rule they follow.

How do we get from 12 to 5? We can do that by subtracting 7 from

12:

$$12 - 7 = 5.$$

But does this rule work for the second pair, as well? When we subtract 7 from 15 we get 8 and not 6, so this is not the right rule in this question, because the rule must apply to all pairs.

How else can we get from 12 to 5? 5 is very close to the result of dividing 12 by 3, which is 4, with the addition of 1:

$$12 \div 3 + 1 = 5.$$

Does this rule work for the second pair, as well? When we divide 15 by 3 and add 1, we get 6:

$$15 \div 3 + 1 = 6.$$

We see that the rule "divide the first number by 3 and add 1 to get the second" works in both pairs, so in the next pair we should also divide by 3 and add 1:

$$18 \div 3 + 1 = 7.$$

Therefore, **7** is the correct answer.

Sample Question 11**The correct answer is 3.**

In this series, the pattern is as follows: first, 2 is added, then 4 is subtracted; then 2 is added again, then 4 is subtracted, and so on.

The pattern is: **+2, -4, +2, -4, ...**

The last two numbers in this series are 5 and 7. 7 is *larger* than 5 by 2, so the next number in the series should be *smaller* than 7 by 4.

$$7 - 4 = 3$$

Therefore, **3** is the correct answer.

Sample Question 12

The correct answer is **14**

In this series, we can look at the pattern as the combination of two distinct patterns that alternate. One pattern (the odd terms) is a series of numbers that increases by 4, and the other pattern (the even terms) is a series that increases by 3

The odd terms pattern is: **5, 8, 9, 11, 13, ...** → **+4, +4, +4, ...**

The even term pattern is: **5, 8, 9, 11, 13, ...** → **+3, +3, +3, ...**

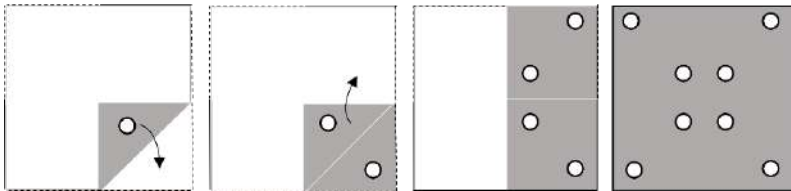
We are missing the sixth number, which is an even term. Therefore, it should be larger than the last even term (the fourth number) by 3. The fourth number is 11, so:

$$11 + 3 = 14$$

Therefore, **14** is the correct answer.

Sample Question 13

**The correct answer is 2.**



- The paper has one hole punched and is folded 3 times.
- If we open the first crease which covers one hole it would result in the next picture having 2 holes.
- If we open the second crease which covers 2 holes it would result in the next picture having 4 holes.
- If we open the third crease which covers 4 holes it would result in the final picture having 8 holes.

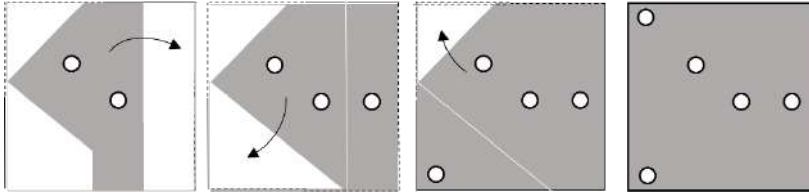
Answers 3 and 5 are incorrect because they do not have 8

holes. Answer 4 is incorrect because the hole placement is

wrong.

Sample Question 14

The correct answer is 1.



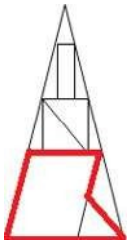
- The paper has two holes punched and is folded three times.
- If we open the first crease which covers one hole it would result in the next picture having 3 holes.
  - If we open the second crease which covers one hole it would result in the next picture having 4 holes.
    - If we open the third crease which covers 1 hole it would result in the final picture having 5 holes.

Answers 3 and 5 are incorrect because they do not contain 5 holes.

Answers 2 and 4 are incorrect because when we open the second crease there should be a hole punched in the bottom left corner of the paper which none of those choices contain.

Sample Question 15

The correct answer is 4:



The shape presented includes two parallel edges (sides) that look like a parallelogram. That parallelogram was joined with a triangle on its side:



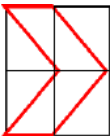
Notice that one set of the parallel side is horizontal while the other is inclined to the right.

- Answer choice 1 has no parallel lines that are inclined and therefore cannot contain the given parallelogram, and so this answer is incorrect.

- Answer choice 2 has parallel lines that incline similarly to the given shape, however the triangles in the picture are not joined with them, thus it cannot contain the shape, making this choice incorrect.
- Answer choice 3 contains triangles that are different than the one in the given shape and therefore it also cannot contain the shape and is incorrect.
- Answer choice 5 has parallel lines; however, they do not incline with the same angle at which the given shape inclines, so they cannot be used to create a correct parallelogram. Therefore, it cannot contain the given shape, making it also incorrect.

Sample Question 16

**The correct answer is 5:**

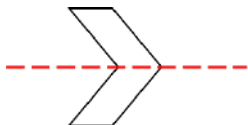


Start by analyzing the shape you need to identify. Once you know its properties, you can use these to find the correct answer or rule out other answer choices.

- The shape is symmetric with respect to a horizontal line.
- Furthermore, the shape given has three pairs of parallel lines (one pair of lines that are horizontal, and the last two pairs can be found above and below the symmetry line) and the lines in these pairs have the same length.
- Finally, the intersecting edges (sides) in the middle of the shape are directed to the right.  
Another way to see this is by thinking of the middle vertices as changing the direction of the lines.

Now that you know the characteristics to look for, examine the answer choices:

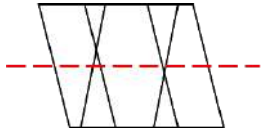
- Answer 5 is correct because you can see the small shape included here:



- Answer 1 is incorrect because it does not include the smaller shape. You can see this by noticing that no pair of lines that are parallel have the same length, or because there is no vertex that changes the direction of the side lines as in the original shape.
- Answer 2 is incorrect because even though it has many pairs of parallel lines, the shape is not included inside it. You can see this by focusing on the vertex mentioned before, which changes the direction of the lines (the intersection of the diagonals) but the original shape has two such vertices, and answer 2 only has one. Answer 2 is also incorrect because it has no inner parallel lines.



- Answer 3 is incorrect because the inside lines intersect at different heights, meaning it is asymmetric, as opposed to the original shape:



- Answer 4 is the most interesting answer among the incorrect ones. This is because it has parallel sides of equal length and two vertices that change the direction of lines. However, the lines that change the direction are not parallel to one another as in the original shape. Therefore, this answer is incorrect.

**Solving Tip:** Remember that symmetry can always be a helpful tool to find the correct answer or rule out others. Another tool that will help you is finding parallel lines and compare them to others to see if they share the same qualities as the ones in the given shape.



Ask **ROB** (expert test developer) your questions by emailing [passedpapers@gmail.com](mailto:passedpapers@gmail.com)

An Associate Fellow of the British Psychological Society, Rob Williams is a Chartered Psychologist with over 25 years of experience working and designing tests.

Rob has worked for the school entrance test publishers ISEB and GL – as well as the leading global psychometric test publishers including SHL, Kenexa IBM, MBTI, CAPP and SOVA Assessment.