

Grade 4: NGN LOGIC OLYMPIAD 2023 - Section A

Student Name: _____

Maximum Time: 75 minutes

Maximum Marks: 60

EXAM INSTRUCTIONS

1. There are **20** questions in this paper.
 - a. **Section A (Basic Level):** 2 Marks, 10 Questions
 - b. **Section B (Moderate Level):** 3 Marks, 5 Questions
 - c. **Section C (Difficult Level):** 5 Marks, 5 Questions
2. No points will be deducted for each incorrect answer. Do not skip any questions. Use your logical reasoning skills to guess the answer.
3. Types of Questions: **Section A:** Pick one correct answer.
Section B: Pick all correct answers. **Section C:** Fill in the blanks and pick all correct answers.
4. The questions in Sections B and C are based on questions related to social impact and global citizenship. The questions in Section B will focus on solving social issues logically. Section C will discuss international global problems that need rational solutions.
5. Pencils, erasers, rulers, and rough paper for calculations are allowed.
6. For some questions in Sections B and C, mark your answer by filling in the bubbles. For Eg: 8.

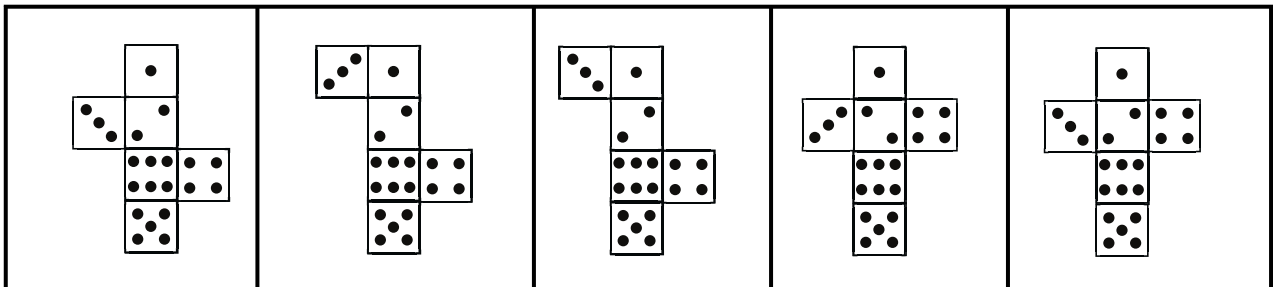
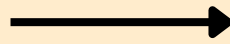


[NGNLearning.com/Logic-Olympiad](https://www.ngnlearning.com/Logic-Olympiad)

SECTION A: 2 MARKS EACH

1. Observe the given 3D cube. **Choose** the correct 2D unfolded version.

3D Cube



(A)

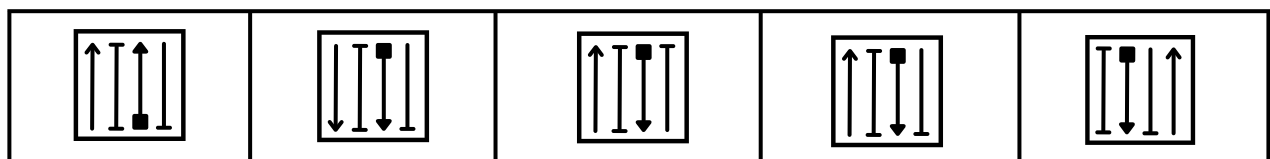
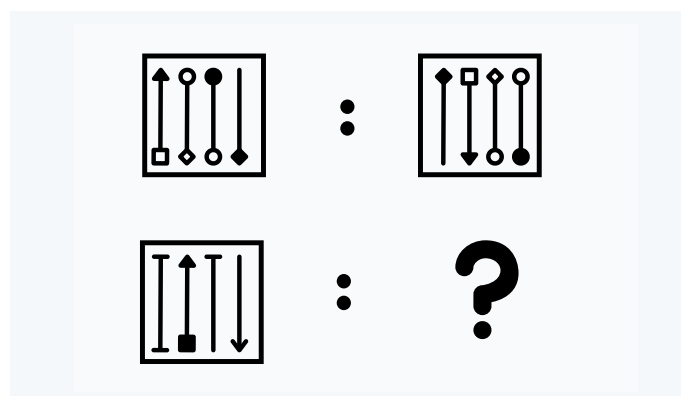
(B)

(C)

(D)

(E)

2. Which shape in the given options completes the second pair in the same way as the first pair? **Choose** the correct option.



(A)

(B)

(C)

(D)

(E)

SECTION A: 2 MARKS EACH

3. Read the question and the two statements given below.

Question: Is the smaller number odd?

Statement 1: The sum of an odd number and an even number is 15.

Statement 2: The product of the two numbers is between 55 and 60.

Choose the correct option in order to answer the question.

(A) Statement 1 ALONE is sufficient, but Statement 2 alone is insufficient.

(B) Statement 2 ALONE is sufficient, but Statement 1 alone is insufficient.

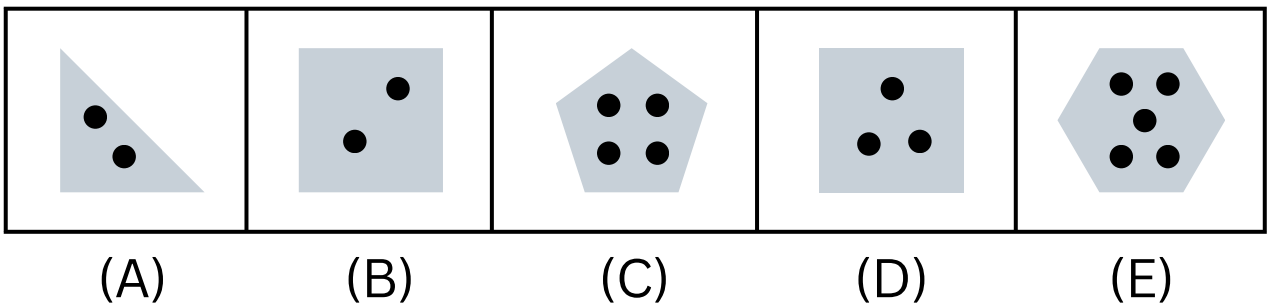
(C) Both statements together are sufficient.

(D) Each statement alone is sufficient.

(E) Neither statements alone nor together are sufficient.

SECTION A: 2 MARKS EACH

4. **Choose** a figure similar to the two figures given below.

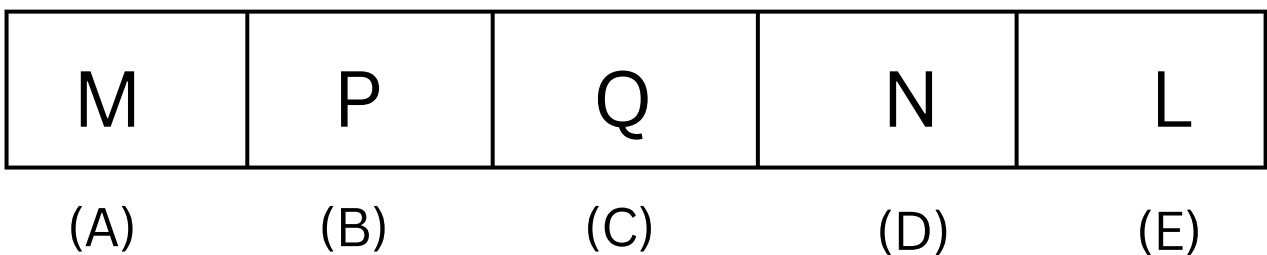


5. L, M, N, O, P, and Q are standing in a queue for tickets to a movie.

Clues:

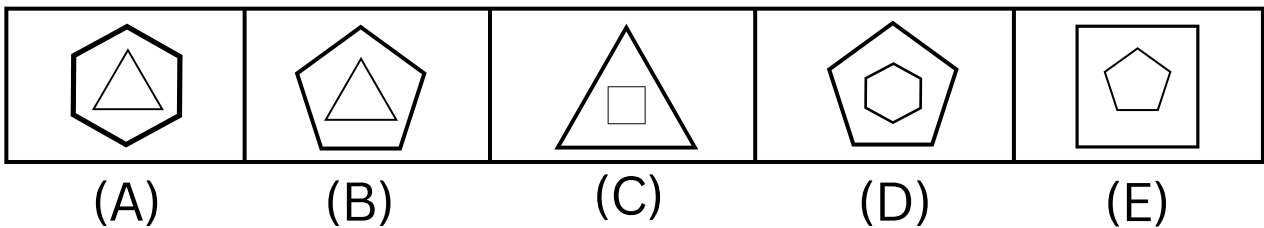
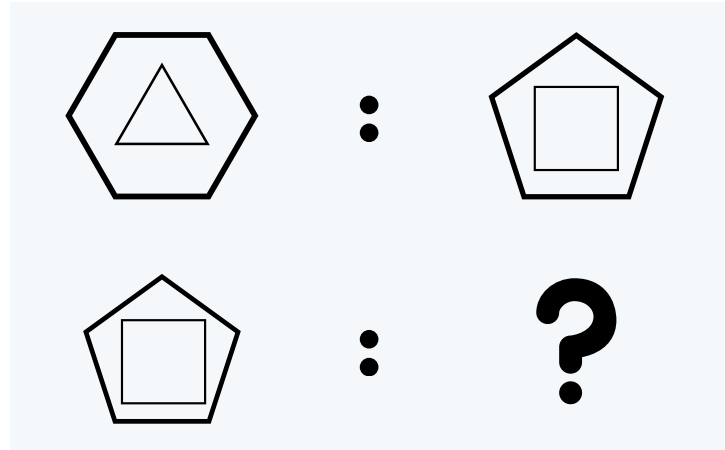
- M and Q are not standing next to each other.
- L and N are next to each other.
- O is at the end of the queue.
- P stands between M and O.

Who is first in line? **Choose** the correct answer.

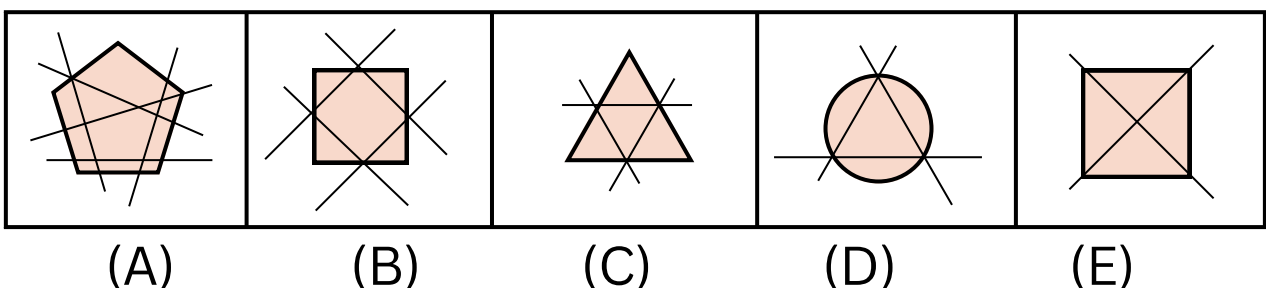
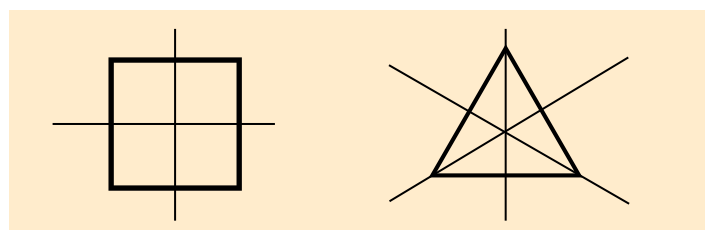


SECTION A: 2 MARKS EACH

6. Which shape in the given options completes the second pair in the same way as the first pair?
Choose the correct option.



7. **Choose** a shape that is similar to the given shapes.



SECTION A: 2 MARKS EACH

8. Order the four sentences given below to make a coherent paragraph. **Choose** the correct sequence from the options.

(1) The circular economy design also addresses issues such as traffic congestion.

(2) This includes reducing emissions of harmful substances, pollution, and waste.

(3) A circular economy aims to minimize negative impacts on human health and natural systems caused by economic activity.

(4) It utilizes bio-based materials by promoting multiple uses throughout their lifecycle in the economy and nature.

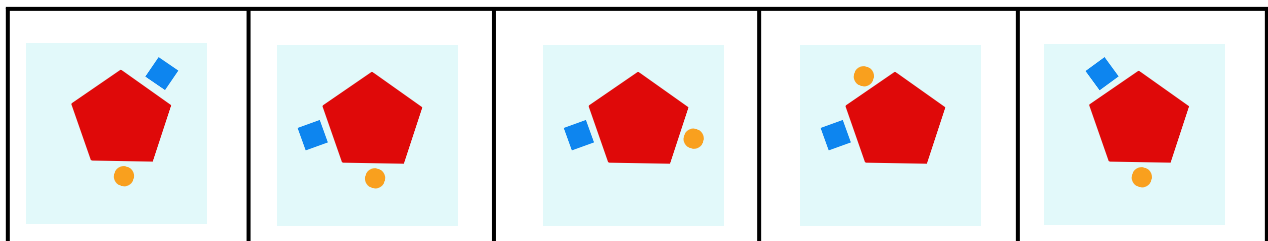
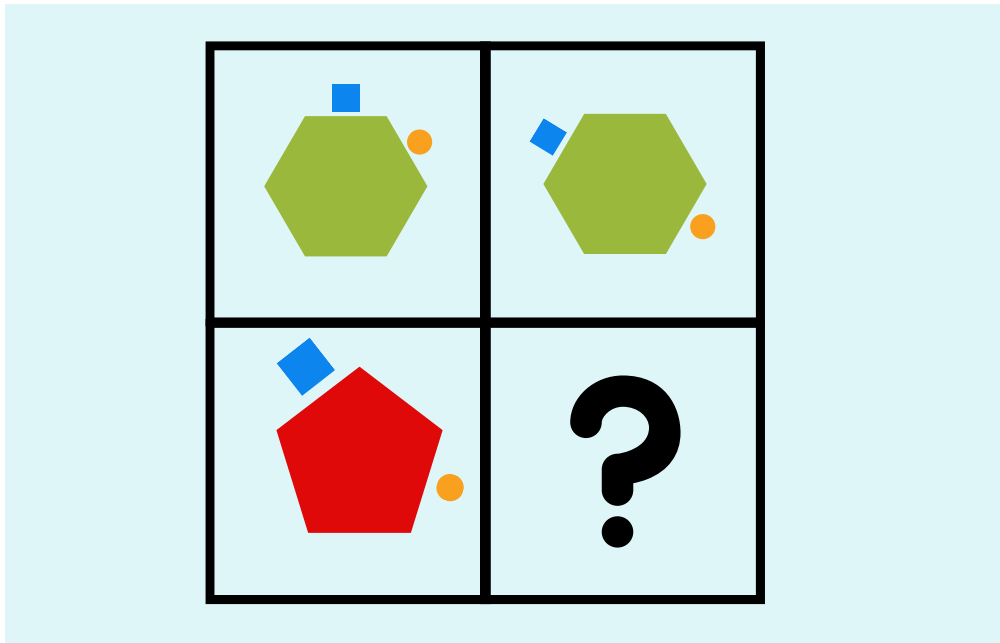
Credit: ELLEN MACARTHUR FOUNDATION, - archive.ellenmacarthurfoundation.org

(A) 1, 2, 3, 4	(B) 3, 4, 1, 2
(C) 3, 2, 4, 1	(D) 3, 4, 2, 1
(E) 3, 1, 4, 2	

SECTION A: 2 MARKS EACH

9. Which shape in the given options completes the matrix shown below?

Choose the correct option.



(A)

(B)

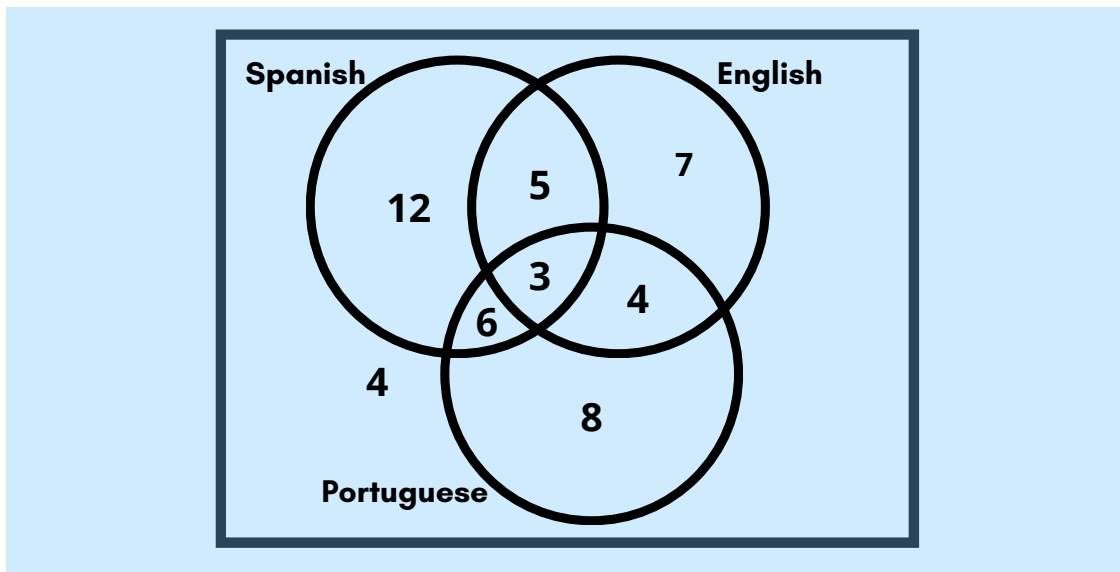
(C)

(D)

(E)

SECTION A: 2 MARKS EACH

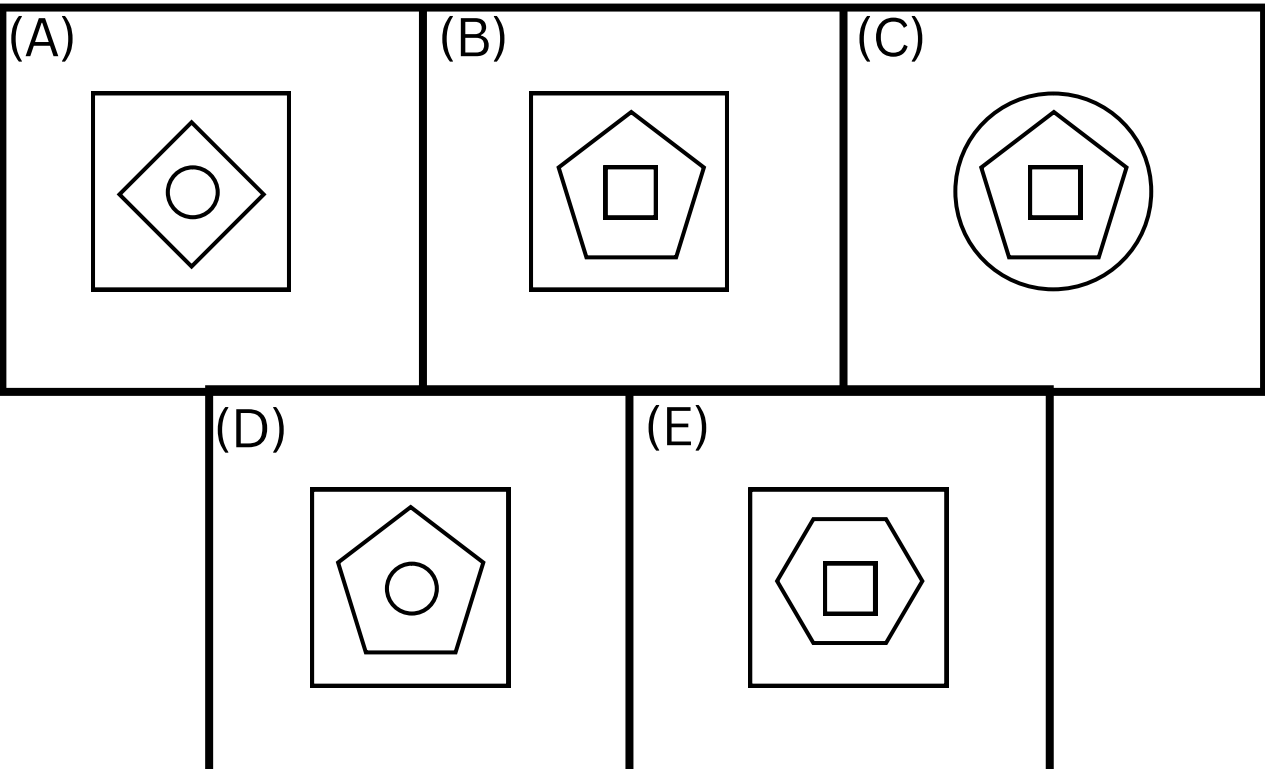
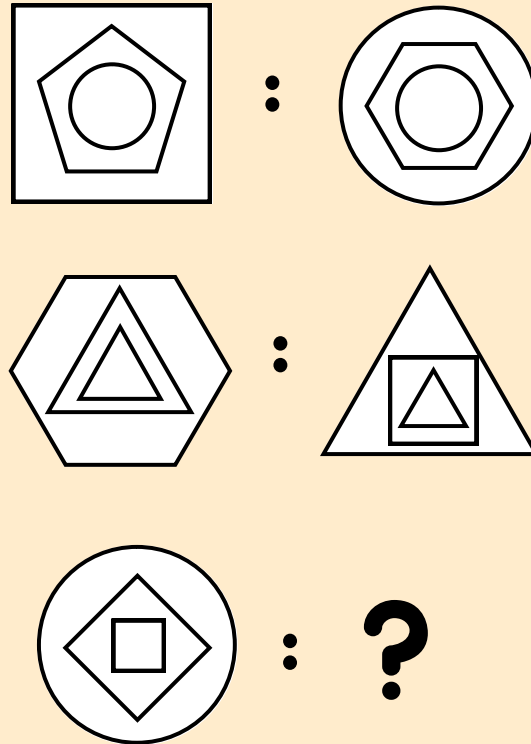
10. The Venn diagram below shows the languages spoken by a group of students. Find the number of students who speak at least two languages. **Choose** the correct option.



15	16	12	18	27
(A)	(B)	(C)	(D)	(E)

SECTION A: 2 MARKS EACH

11. Which shape in the given options completes the third pair similar to the two pairs given below? **Choose** the correct option.



SECTION A: 2 MARKS EACH

12. Here are four sentences. Rearrange them to make a meaningful paragraph. **Choose** the correct order of the sentences from the options.

(1) Despite the language barrier, he enjoyed interacting with the locals and learning about the culture.

(2) He visited the Eiffel Tower and was amazed by its grandeur.

(3) John packed his bags and left for a trip to Paris.

(4) He also tried some of the famous French pastries and cuisine.

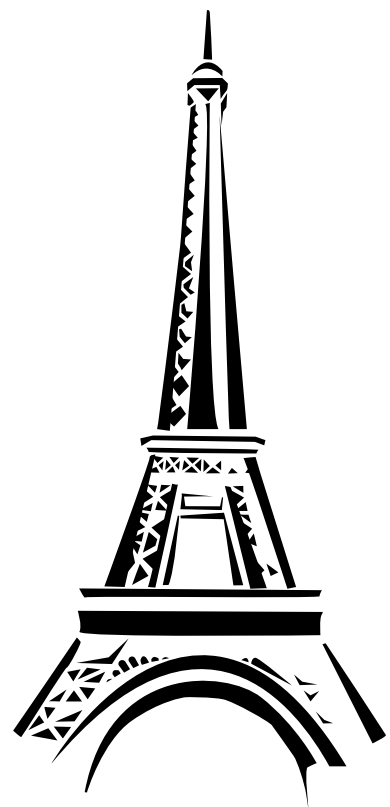
(A) 2, 3, 4, 1

(B) 3, 4, 2, 1

(C) 3, 2, 1, 4

(D) 3, 2, 4, 1

(E) 1, 2, 4, 3



SECTION A: 2 MARKS EACH

13. Here are two statements about Hameed:

(1) If it is dark and it rains, Nawab will stay inside.

(2) If it is dark, Nawab will carry a torch.

Choose the conclusion that can be drawn from the following two statements.

(A) Nawab always stays inside when it is dark.

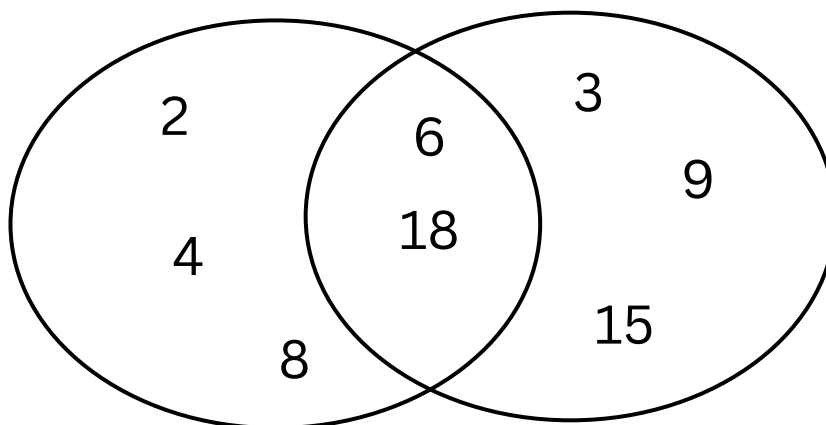
(B) Nawab always carries a torch when it is raining.

(C) Nawab only stays inside when it is dark and raining.

(D) Nawab only carries a torch when it is dark.

(E) None of these.

14. Here is a Venn Diagram consisting of some numbers. **Choose** the number that will not be inside the Venn Diagram.



20	60	25	99	100
(A)	(B)	(C)	(D)	(E)

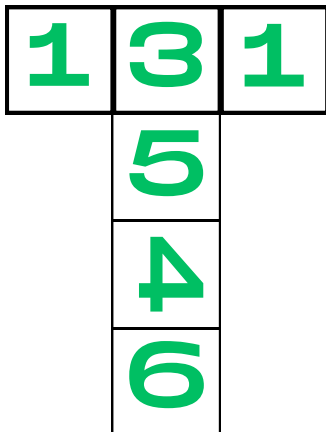
SECTION A: 2 MARKS EACH

15. Observe the given 3D cube.

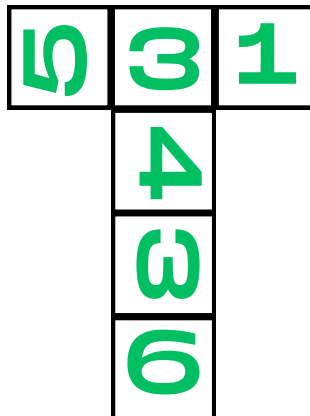
Choose the correct 2D unfolded version.



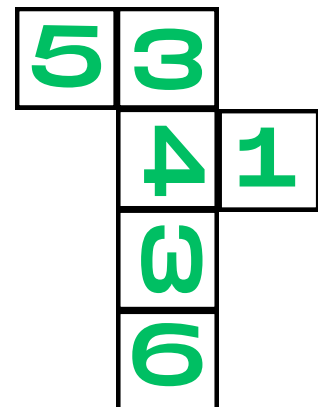
(A)



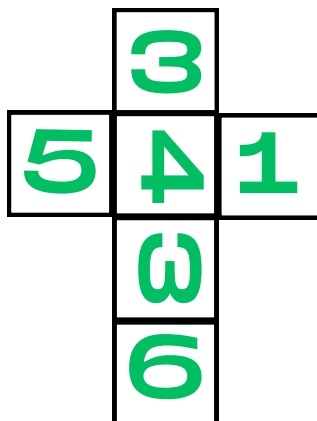
(B)



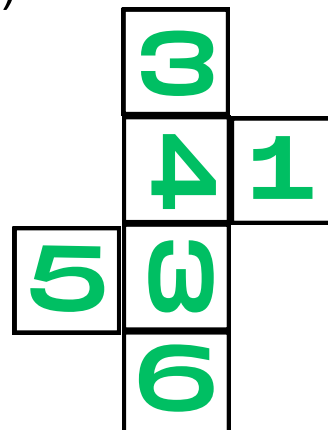
(C)



(D)



(E)



SECTION A: 2 MARKS EACH

16. Ravi introduces a new reading program in his class. Here are the two statements regarding it:

- (1) Students in Ravi's class are more engaged in reading and are excited to pick up new books.
(2) Test scores in reading have improved in Ravi's class

(A) Statement 1 is the cause, and Statement 2 is its effect.

(B) Statement 2 is the cause, and statement 1 is its effect.

(C) Both statements 1 and 2 are independent causes.

(D) Both statements 1 and 2 are effects of independent causes.

(E) Both statements 1 and 2 are effects of some common cause.

SECTION A: 2 MARKS EACH

17. Adam, Ben, Chris, Dave, and Evan stand in a line and face in the same direction. Here are some clues regarding how they are standing:

- (1) Ben is to the immediate left of Dave, who does not stand next to Adam or Evan.
- (2) Chris is next to Ben.
- (3) Adam is somewhere to the right of Evan.

Choose the person who stands in the middle.

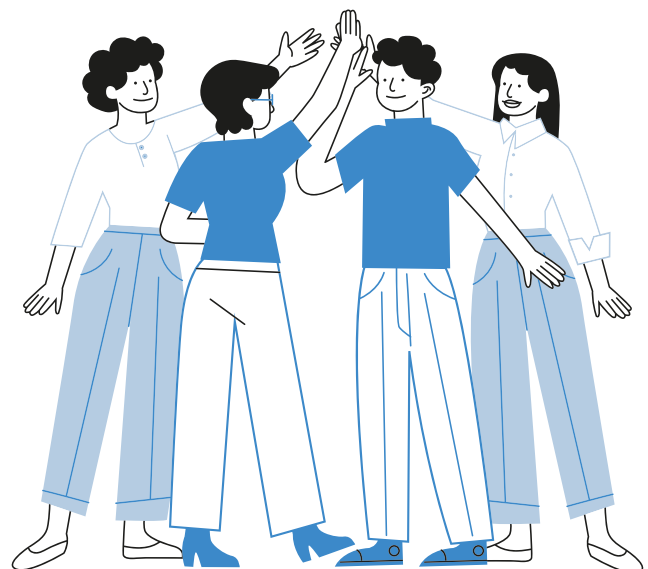
(A) Adam

(B) Ben

(C) Chris

(D) Dave

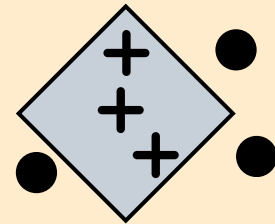
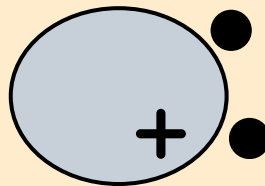
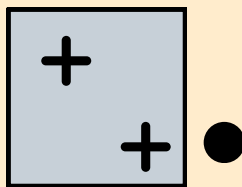
(E) Evan



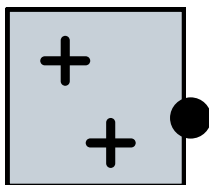
SECTION A: 2 MARKS EACH

18. There are three figures shown below, which are similar to each other.

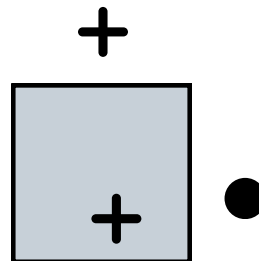
Choose the figure from the options which is most similar or alike to these figures.



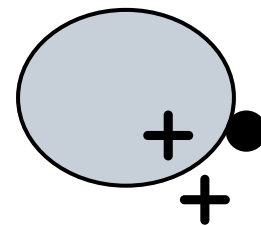
(A)



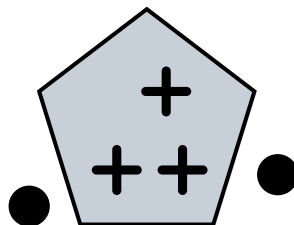
(B)



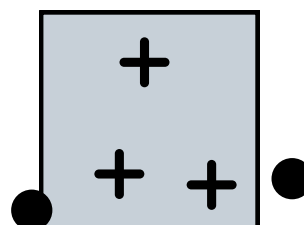
(C)



(D)



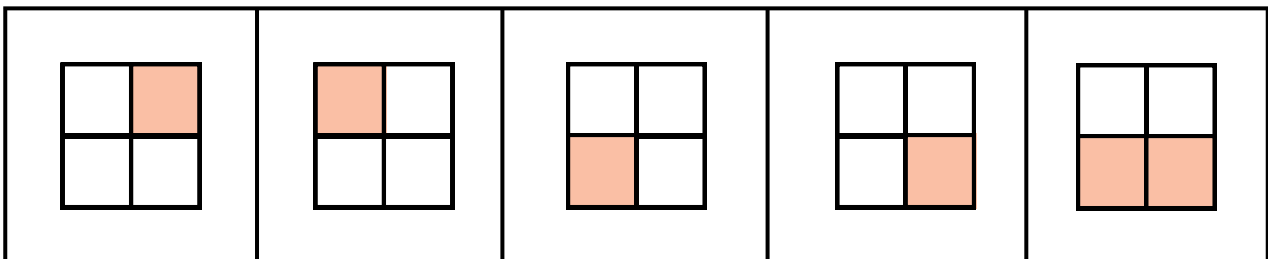
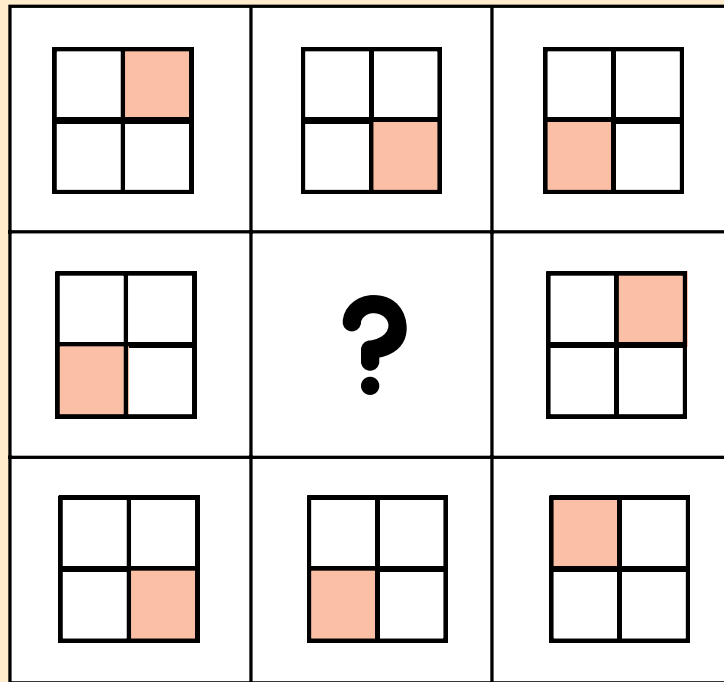
(E)



SECTION A: 2 MARKS EACH

19. The figures in the below grid follow a certain pattern.

Choose the figure that will complete the grid.



(A)

(B)

(C)

(D)

(E)

SECTION A: 2 MARKS EACH

20. Here is a question and two statements regarding the same.

Question: Is the number 132 odd or even?

Statement 1: 132 is a multiple of 3.

Statement 2: 132 is a multiple of 2.

(A) Statement 1 alone is sufficient to answer the question.

(B) Statement 2 alone is sufficient to answer the question.

(C) Both statements 1 and 2 are necessary to answer the question.

(D) Either Statement 1 or Statement 2 alone is sufficient to answer the question.

(E) None of these



ANSWER KEY

Preparatory Classes Available

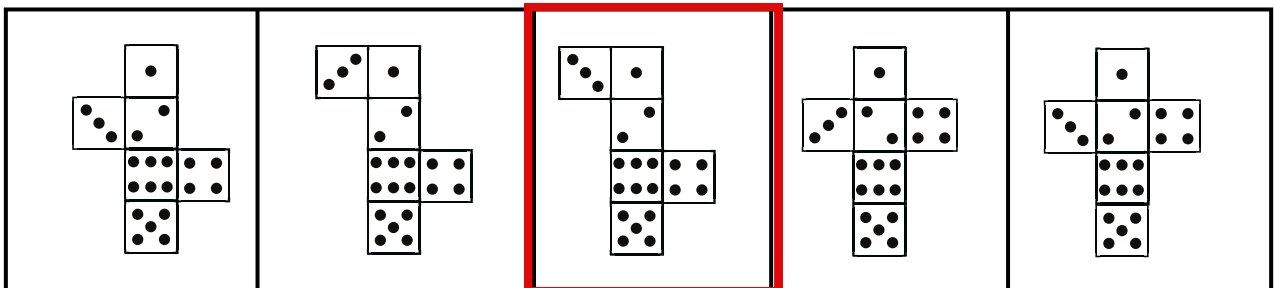
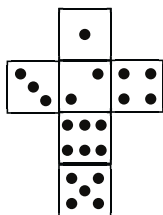
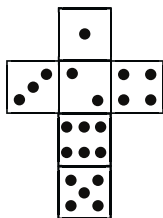
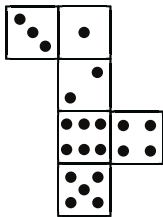
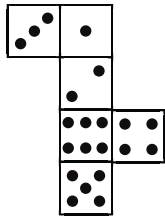
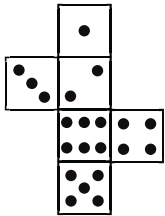
Step-Wise Solution Available

NGNLearning.com/Logic-Olympiad

SECTION A: ANSWER KEY

1. (C)

Step 1:



(A)

(B)

(C)

(D)

(E)

SECTION A: ANSWER KEY

2. (D)

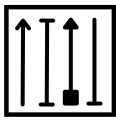
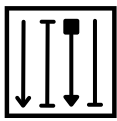
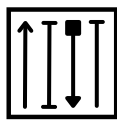
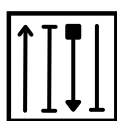
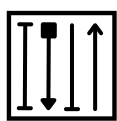
Step 1: Observe that there are four figures in each box.

Step 2: The 1st figure flips vertically and moves to 2nd position.

Step 3: The 2nd figure flips vertically and moves to the 3rd position.

Step 4: The 3rd figure flips vertically and moves to the 4th position.

Step 5: The 4th figure flips vertically and moves to the 1st position.

				
(A)	(B)	(C)	(D)	(E)

SECTION A: ANSWER KEY

3. (C)

Step 1: 15 can be represented as $(1 + 14)$, $(2 + 13)$, $(3 + 12)$, $(4 + 11)$, $(5 + 10)$, $(6 + 9)$, and $(7 + 8)$.

Step 2: The product of these numbers will be 14, 26, 36, 44, 50, 54, and 56, respectively.

Step 3: The only possible numbers will be 7 and 8.

Step 4: The smaller number is odd.

Step 5: Therefore, two statements are sufficient for the question.

(A) Statement 1 ALONE is sufficient, but Statement 2 alone is insufficient.

B) Statement 2 ALONE is sufficient, but Statement 1 alone is insufficient.

(C) Both statements together are sufficient.

(D) Each statement alone is sufficient.

(E) Neither statements alone nor together are sufficient.

SECTION A: ANSWER KEY

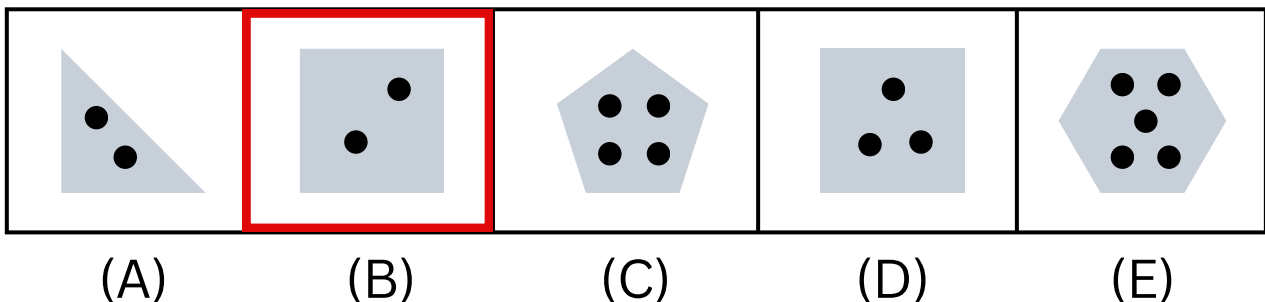
4. (B)

Step 1: In the first figure, the number of sides of the polygon is 6, and the number of dots inside is 4.

Step 2: In the second figure, the number of sides of the polygon is 5, and the number of dots inside is 3.

Step 3: The number of sides of the polygon must be 2 greater than the number of dots inside.

Step 4: In option (B), the number of sides of the polygon is 4, and the number of dots inside is 2.



SECTION A: ANSWER KEY

5. (C)

Step 1: O is at the end of the line.

— — — — — O

Step 2: P stands between M and O

— — — M P O

Step 3: M and Q are not standing next to each other, which means Q is either in first or second place.

— Q — M P O

Q — — M P O

Step 4: If Q is second, L and N would not stand next to each other, which means Q must be first in line.

— Q — M P O 

Q — — M P O 

M	P	Q	N	L
(A)	(B)	(C)	(D)	(E)

SECTION A: ANSWER KEY

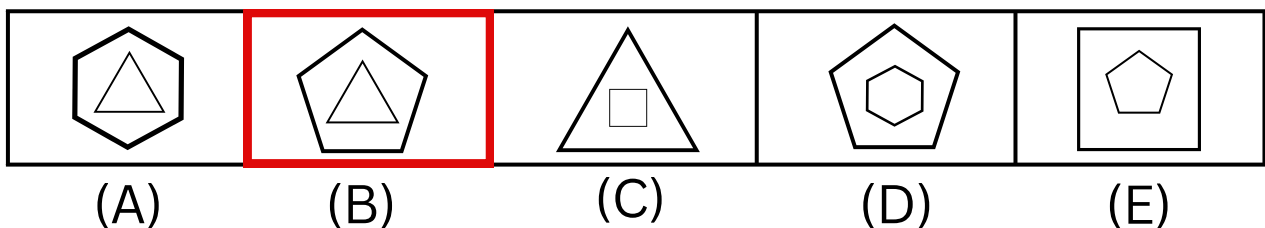
6. (B)

Step 1: The polygon outside reduces its side by 1.

Step 2: The inner polygon increases its side by 1.

Step 3: The outside pentagon changes to a square.

Step 4: The inner square changes to a pentagon.

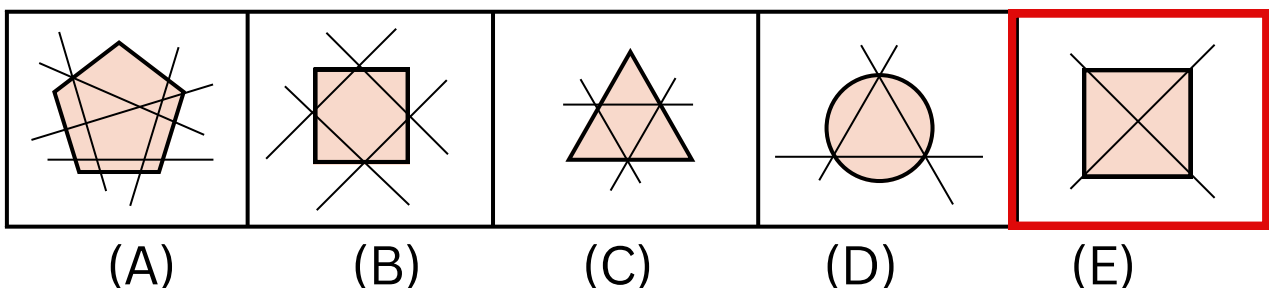


7. (E)

Step 1: For the first figure, all the lines cut the square into two equal symmetrical halves

Step 2: For the second figure, all three lines cut the triangle into two symmetrical halves.

Step 3: Similarly, in option (E), all the lines cut the square into two equal halves



SECTION A: ANSWER KEY

8. (D)

Step 1: Sentence 3 is an introduction to the concept discussed in the paragraph.

Step 2: Sentence 1 explains the concept.

Step 3: Sentence 2 expands on the concept.

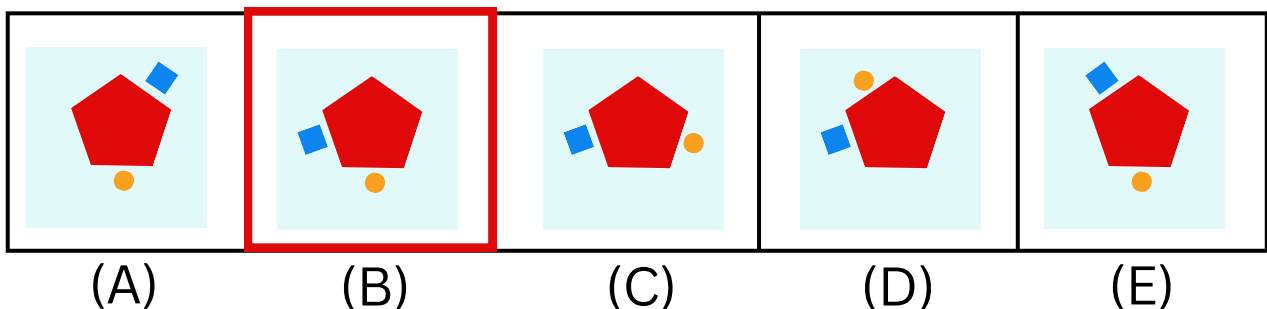
Step 4: Sentence 4 explains extra things included in the concept.

(A) 1, 2, 3, 4	(B) 3, 4, 1, 2
(C) 3, 2, 4, 1	(D) 3, 4, 2, 1
(E) 3, 1, 4, 2	

9. (B)

Step 1: In the case of the hexagon, the circle moves in the clockwise direction by one side, and the square moves anticlockwise by one side

Step 2: In the case of the pentagon, the circle moves in the clockwise direction by one side, and the square moves anticlockwise by one side.



SECTION A: ANSWER KEY

10. (D)

Step 1: The number of students who speak just English and Spanish is 5

Step 2: The number of students who speak just Spanish and Portuguese is 6

Step 3: The number of students who speak just Portuguese and English is 4

Step 4: The number of students who speaks all three languages is 3

Step 5: $5 + 6 + 4 + 3 = 18$

15	16	12	18	27
(A)	(B)	(C)	(D)	(E)

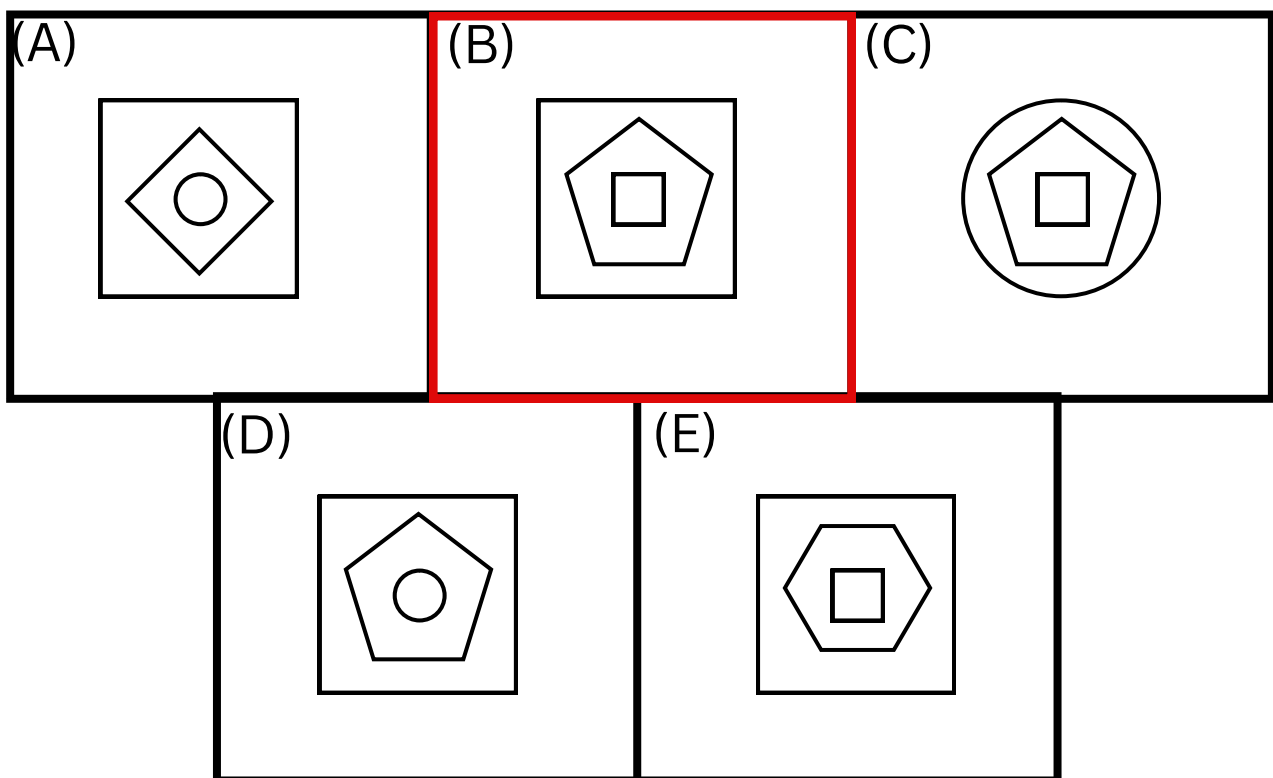
SECTION A: ANSWER KEY

11. (B)

Step 1: The innermost shape does not change.

Step 2: One more side is added to the middle shape.

Step 3: The outermost shape takes the shape of the innermost shape.



SECTION A: ANSWER KEY

12. (D)

Step 1: The meaningful paragraph is "(3) John packed his bags and left for a trip to Paris. (2) He visited the Eiffel Tower and was amazed by its grandeur. (4) He also tried some of the famous French pastries and cuisine. (1) Despite the language barrier, he enjoyed interacting with the locals and learning about the culture."

(A) 2, 3, 4, 1
(B) 3, 4, 2, 1
(C) 3, 2, 1, 4
(D) 3, 2, 4, 1
(E) 1, 2, 4, 3

SECTION A: ANSWER KEY

13. (D)

Step 1: Statement (1) provides a condition for Nawab to stay inside, which is when it is both dark and raining. Statement (2) provides a condition for Nawab to carry a torch, which is when it is dark. Therefore, the only conclusion that can be drawn is that Nawab carries a torch when it is dark.

- | |
|--|
| (A) Nawab always stays inside when it is dark. |
| (B) Nawab always carries a torch when it is raining. |
| (C) Nawab only stays inside when it is dark and raining. |
| (D) Nawab only carries a torch when it is dark. |
| (E) None of these. |

14. (C)

Step 1: The left oval will contain multiples of 2; the right oval will contain multiples of 3; and the overlap contains multiples of 2 and 3, i.e., 6.

Step 2: Therefore, 25 is not a multiple of either 2, 3, or 6; it will not be inside the Venn diagram.

20	60	25	99	100
(A)	(B)	(C)	(D)	(E)

SECTION A: ANSWER KEY

15. (B)

Step 1: The right side of '3' should face the top side of '6,' the right side of '5' should face the left side of '6,' and the bottom of '3' should face the top of '5.' Only Option B is possible.

(A)

1	3	1
	5	
	4	
	6	

(B)

5	3	1
	4	
	6	
	6	

(C)

5	3	
	4	1
	6	
	6	

(D)

	3	
5	4	1
	6	
	6	

(E)

	3	
	4	1
5	6	
	6	

SECTION A: ANSWER KEY

16. (E)

Step 1: The two statements are the two effects because of Ravi's new reading program.

Step 2: Both statements have the same cause.

(A) Statement 1 is the cause, and Statement 2 is its effect.

B) Statement 2 is the cause, and statement 1 is its effect.

(C) Both statements 1 and 2 are independent causes.

(D) Both statements 1 and 2 are effects of independent causes.

(E) Both statements 1 and 2 are effects of some common cause.

SECTION A: ANSWER KEY

17. (C)

Step 1: Consider that everyone is looking in the north direction. From the first clue, we get the following arrangement:

B D

 North

Step 2: From the second clue, we get the following arrangement:

C B D

Step 3: From the third clue, we get the following arrangement as Evan or Adam can't sit next to Dave:

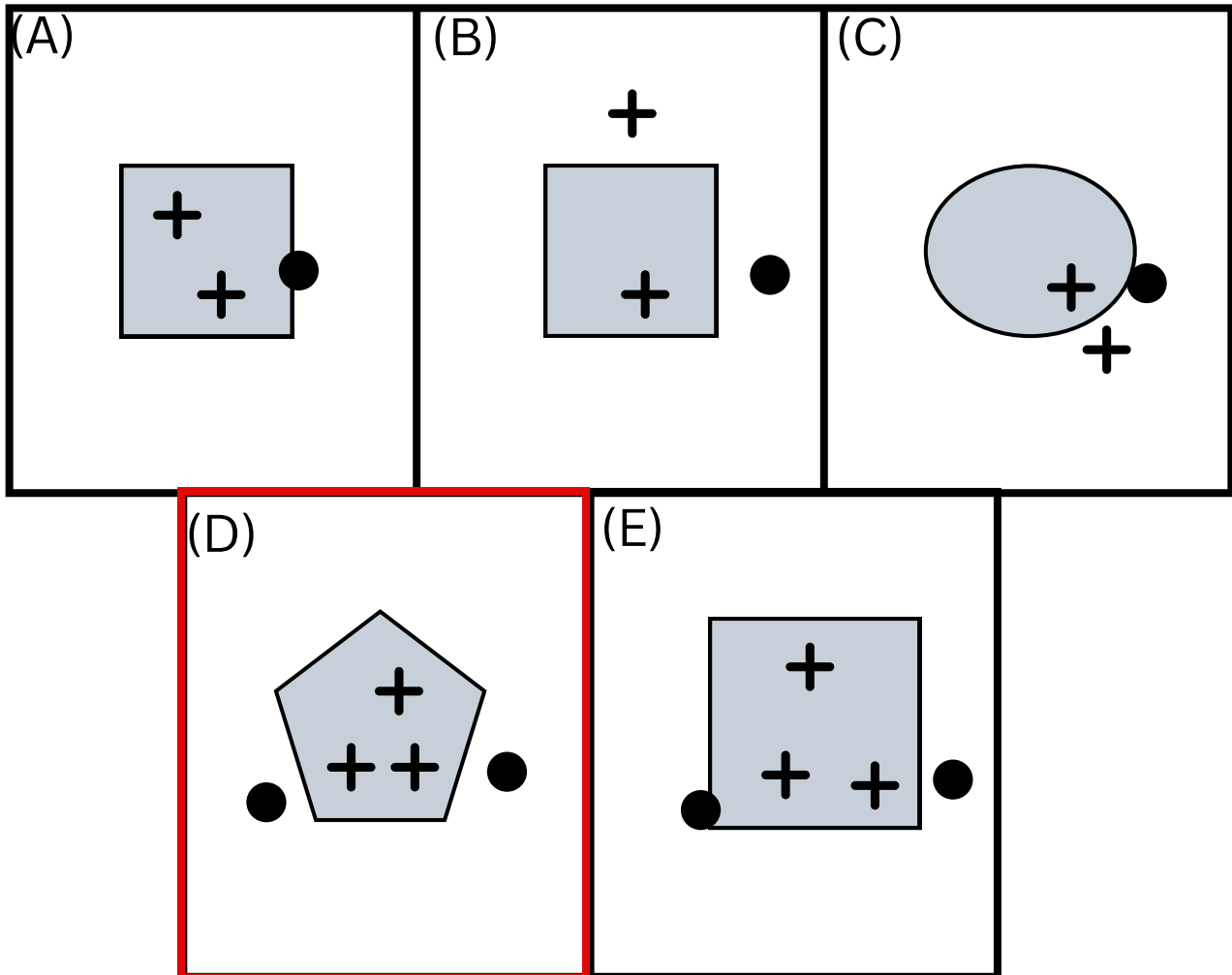
E A C B D

(A) Adam
(B) Ben
(C) Chris
(D) Dave
(E) Evan

SECTION A: ANSWER KEY

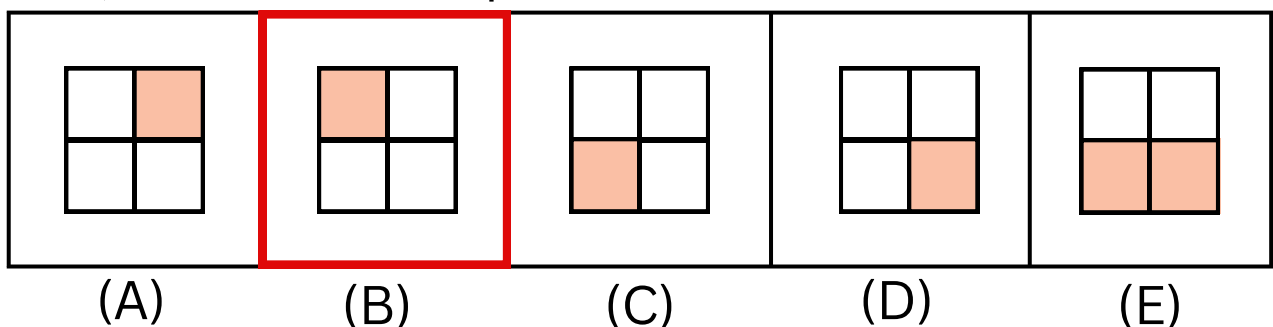
18. (D)

Step 1: The "+" sign should be inside the shape, and the dot should be clearly outside it.



19. (B)

Step 1: The pattern is a horizontal one. In each row, the colored square moves clockwise.



SECTION A: ANSWER KEY

20. (B)

Step 1: To know if 132 is an even number or not, we just need to check whether it is a multiple of 2.

(A) Statement 1 alone is sufficient to answer the question.

(B) Statement 2 alone is sufficient to answer the question.

(C) Both statements 1 and 2 are necessary to answer the question.

(D) Either Statement 1 or Statement 2 alone is sufficient to answer the question.

(E) None of these