



# Non Verbal Reasoning

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## Non Verbal Reasoning

In Non-verbal reasoning, we solve the problem which is presented in the diagram or pictorial format. We analyse the question figure and look for visual clues which are needed to deduce the final answer.

The Non-verbal reasoning is divided into 5 major categories –

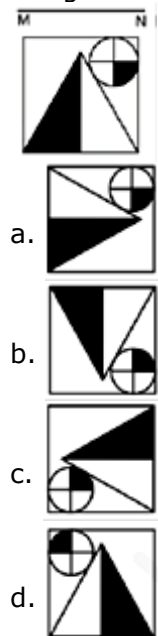
1. Mirror image and water image
2. Embedded figure
3. Pattern completion
4. Papercutting and folding

### Mirror Image

**Mirror image** - A mirror image is a reflected duplication of an object that appears almost identical, but it is reversed in the direction perpendicular to the mirror surface. As an optical effect, it results from the reflection of substances such as a mirror or water.

**When the mirror is placed at top of the image.**

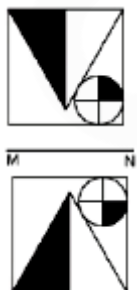
If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?



Ans. B

Solution –

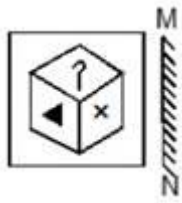
The mirror image will be:



Hence, the correct option is B

**When the mirror is placed at the right hand side of the image.**

If a mirror is placed on the line MN, then which of the answer figure is the right of the given figure?

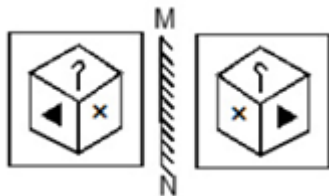


- a.
- b.
- c.
- d.

Ans. D

Solution –

The mirror image will be:



Hence, the correct option is D.

**When the mirror is placed at the left hand side of the image.**

If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?



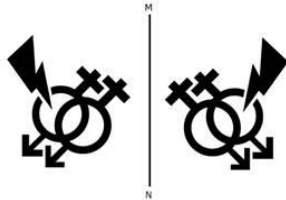
- a.
- b.
- c.



Ans. D

Solution –

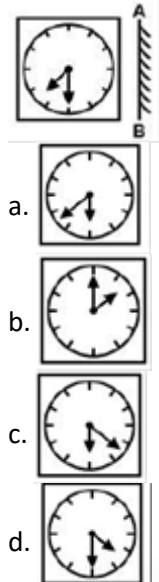
In a plane mirror, a mirror image is a reflected duplication of an object that appears almost identical, but it is reversed in the direction perpendicular to the mirror surface. As an optical effect it results from reflection of substances such as a mirror or water.



Hence answer figure (d) is correct.

**Clock based mirror image question:**

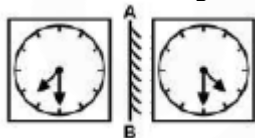
If a mirror is placed on the line AB, then which of the answer figure is the right image of the given figure?



Ans. D

Solution –

The mirror image will be:



Hence, the correct option is D.

**Letter based mirror image question:**

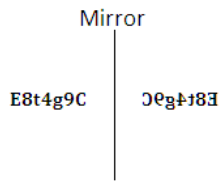
If we place a mirror on the right side of the given figure, find the correct mirror image of the figure.

E8t4g9C

- a. ɹ9g4t8ɹ
- b. ɹɐg4t8ɹ
- c. ɹɐg4t8ɹ
- d. 38t4gɐC

Ans. B

Solution – After observing the given diagram carefully, option B is the correct mirror image of the given question.



Hence answer figure (B) is correct.

### Water Image based Question

Water image of small letters

a	b	c	d	e	f	g	h	i	j	k	l	m
g	p	c	q	e	t	8	μ	!	!	κ	!	w

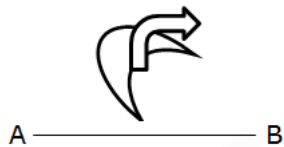
n	o	p	q	r	s	t	u	v	w	x	y	z
u	o	b	d	l	z	f	n	Λ	M	x	λ	z





### Water image of numbers

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9

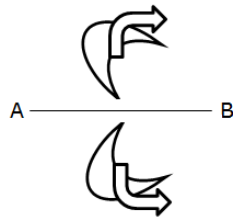
What will be the water image of the given question figure?



- a. 
- b. 
- c. 
- d. 

Ans. B  
Solution –

After observing the given diagram carefully, option figure B is the correct mirror image of the given figure.



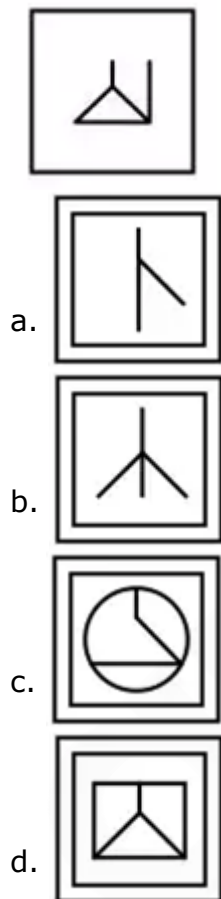
Hence answer figure (b) is correct.

### **Embedded Figures**

Embedded figures are the figures which are hidden or embedded in the question figure. They can be complex, but by looking at all the options we may be able to deduce the final answer.

### **Embedded figures without Rotation –**

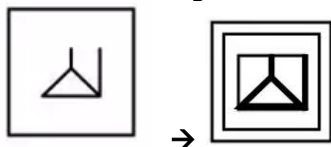
1. From the given answer figures, select the one in which the question figure is hidden/embedded.



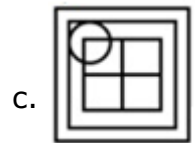
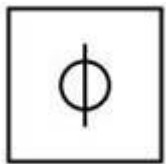
Ans. D

Solution –

The question figure is hidden in option D



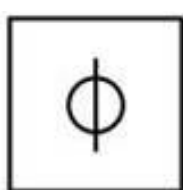
2. From the given answer figures, select the one in which the question figure is hidden/embedded.



Ans. B

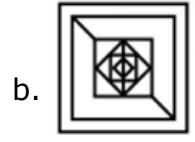
Solution –

The question figure is hidden in option B



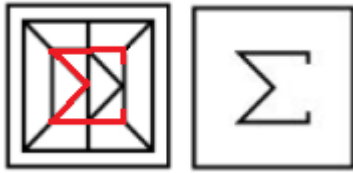
**Embedded figures with Rotation –**

1. From the given answer figures, select the one in which the question figure is hidden/embedded.



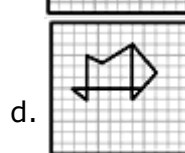
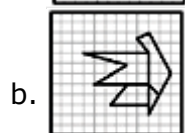
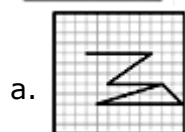
Ans. C

Solution –



Hence, the correct option is C.

2. From the given answer figures, select the one in which the question figure is hidden/embedded.



Ans. B

Solution –

On close observation, we find that the problem figure is embedded in figure (B) as shown below



### Pattern completion

These questions are the figures in which certain part of the figure is blank or not visible. They can be complex, but with the help of the options, **we may be able to deduce the final answer.**

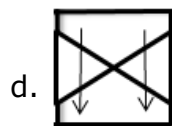
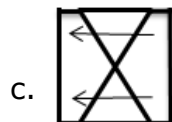
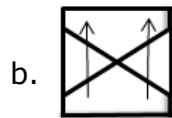
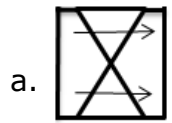
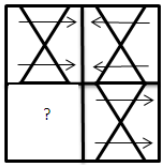
**We can solve this by analysing the lines or patterns and continuing them in the direction of the blank space and cross verify with the options to get the final answer.**

**Some common types of pattern completion,**

- Upper half portion is the mirror image of the lower half portion
- Half left portion is the mirror image of the half right portion
- Upper left portion is the mirror image of the lower right portion and vice versa
- Rotating the diagram in the clockwise or in the anti-clockwise direction
- Addition of element

1. Which answer figure will complete the pattern in the question figure?

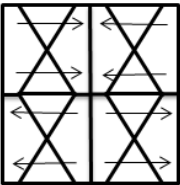




**Ans. C**

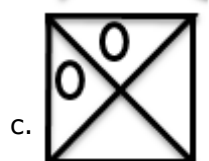
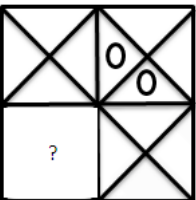
**Solution –**

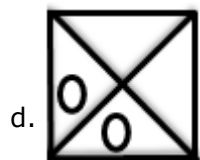
After carefully observing the figures given in the question, it is very clear that the answer figure(c) will be the missing figure.



Hence, the correct answer is option C.

2. Which answer figure will complete the pattern in the question figure?

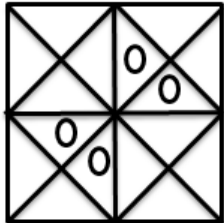




Ans. B

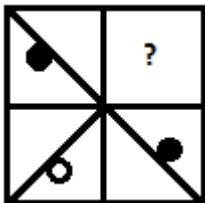
Solution –





After carefully observing the figures given in the question, it is very clear that the answer figure(b) will be the next figure.



Hence, the correct answer is option B.

3. Which answer figure will complete the pattern in the question figure?



- a. 
- b. 
- c. 
- d. 

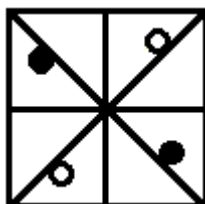
Ans. C

Solution –

On observing the options we can see that the figure given under option (C) is completing the pattern when placed in the blank space of question figure as shown below,

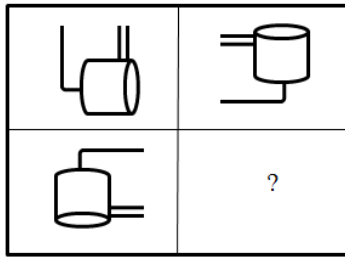


Complete figure –



Hence, option C is correct response.

4. Which answer figure will complete the pattern in the question figure?

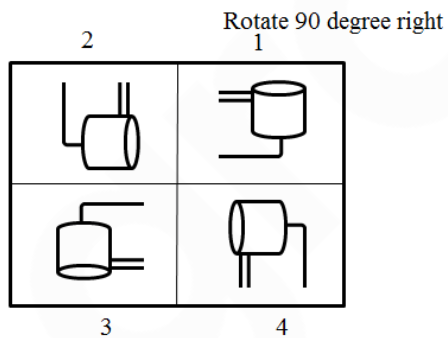


- a.
- b.
- c.
- d.

Ans. C

Solution –

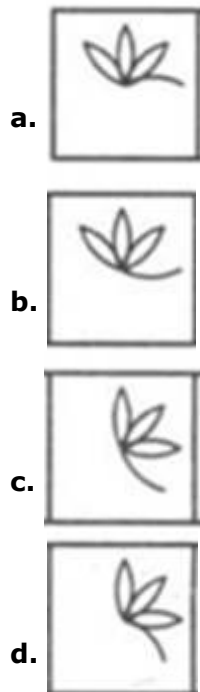
After observation, it is clear that, answer figure (c) will complete the question figure after placing it at question marked place.



Here, option c is the correct answer.

5. The first figure in the first unit of the problem figures bears a certain relationship to the second figure. Similarly, one of the figures in the answer figures bears the **same relationship** to the second figure in the second unit of the problem figures. You are therefore to locate the figure which would fit in the question mark.





Ans. B

Solution –

In the first figure, from second the group of leaves rotates  $180^\circ$  anti-clockwise and half leaf forms ahead opposite of last half leaf and one and a half leaf missed from backside with this as well.

### Papercutting and folding

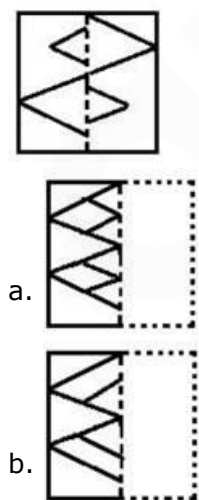
In this type of questions, some cuts or folds are made in a sheet of paper and then opened. We have to choose the correct options from the options.

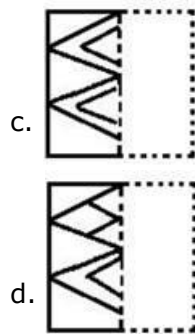
It is classified under 2 categories –

1. Cutting
2. Folding

Below we are going to explain the categories mentioned above with examples

1. Select the option that depicts how the given transparent sheet of paper would appear if it is folded at the dotted line.





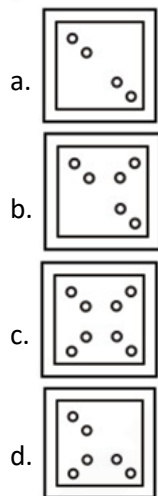
Ans. C

Solution –

When the transparent sheet would be folded from the dotted line. The bigger mark will cover the small one and small one will be inside the bigger one as shown in the figure given in option 'C'

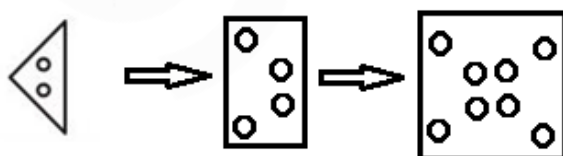
Hence, option (C) is the correct answer.

2. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened?



Ans. C

Solution –



Hence, option C is the correct response.