

Non Verbal Reasoning

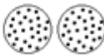
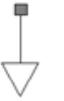
Paper 1

Read the following instructions

1. Do not open or turn over this booklet until you are told to do so.
2. You have 30 minutes to complete 60 questions.
3. Work out the answers quickly and carefully.
4. If you cannot answer any question, go on to the next question.
5. If you are not sure of an answer, choose the one that you think is the best option.
6. When you have completed, go back to the questions that you might have missed out.
7. Use any extra time available, to recheck your answers.
8. Workings can be done on a separate piece of paper.

Section 1: Codes

The pictures on the left each have a set of letters; you need to work out the code that applies to the shape on the right.

01	 A D P Z  B D R X  A F R Y			B D P X B F P Z B F R Y B D P Z A F P Z a b c d e
02	 C B X M  C D Y N  G B Z N			G B X N C B Y M G B Y M G D Y N G B Z M a b c d e
03	 Z Q T M  Y Q S O  X R S M			W Q T M X Q T O W R S M W R T O W R S O a b c d e
04	 P M Z F  Q N X F  P N W G			P N Y G Q M X G P M Y F P M X G P N X F a b c d e
05	 S B U R  S A V P  T C U P			T B U R S D V R T D U P T C V R T D V R a b c d e

06	 B Q W O  E Q X M  B T V M	 E Q U M B T U O E T V O E T U O E T W M a b c d e
07	 Z T M P  W T N O  X S N P	 W U N O X U M P X U M O W T M O X U N O a b c d e
08	 A M S Z  C N S W  C O T Z	 A P S Z C P T Z A P T W A O T W A P S W a b c d e
09	 A Z S U  B Z Q T  A X R T	 B Y P U B Z P T A Y P U B Y R U B Z P U a b c d e
10	 P V N T  R V M U  R W L T	 P W M U Q W N U Q V M U Q W M T Q W N T a b c d e

End of section 1

Section 2: Series

The five squares on the left contain shapes arranged in order to form a sequence. One of the squares is missing. Choose which one of the five squares on the right should take the place of the empty square.

01		
02		
03		
04		
05		

06		
07		
08		
09		
10		

End of section 2

Section 3: Matrices

Which shape or pattern completes the larger square?

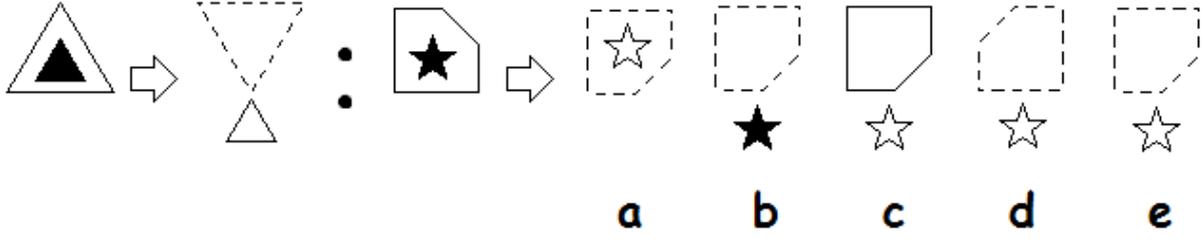
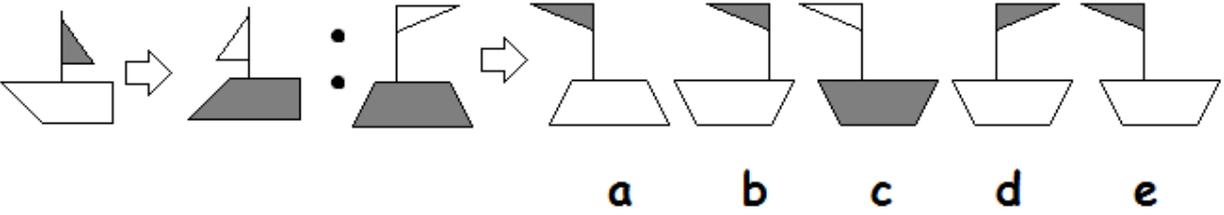
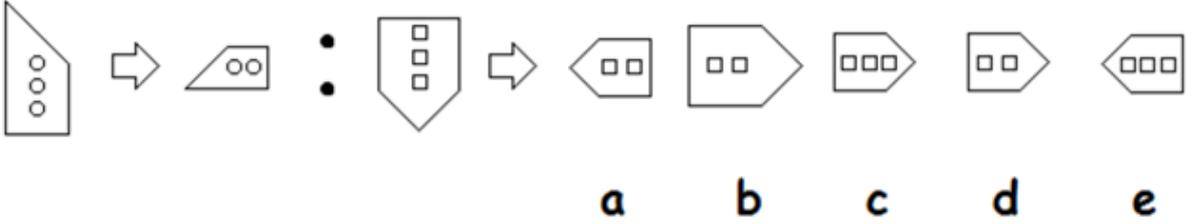
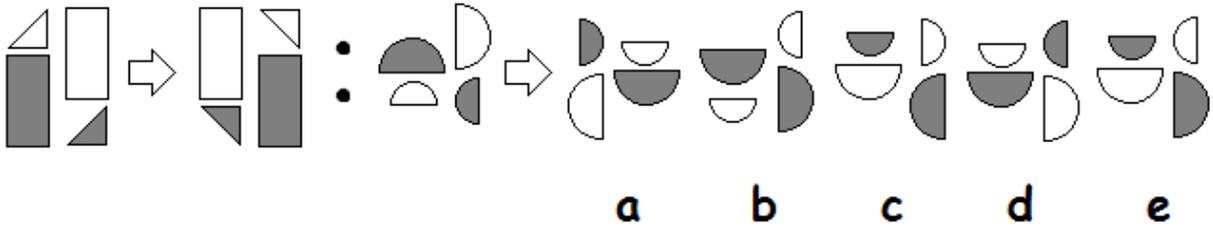
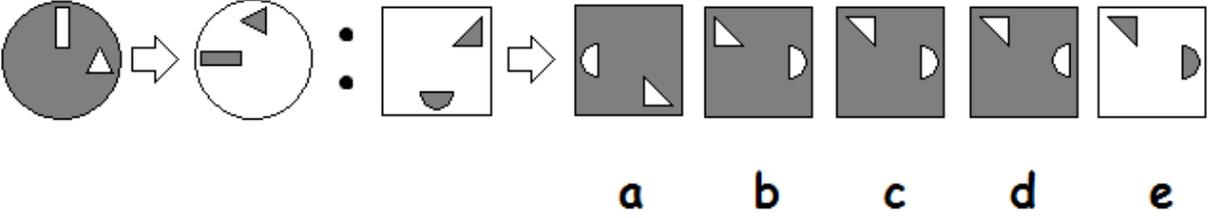
01		 a	 b	 c	 d	 e
02		 a	 b	 c	 d	 e
03		 a	 b	 c	 d	 e
04		 a	 b	 c	 d	 e
05		 a	 b	 c	 d	 e

06		
07		
08		
09		
10		

End of section 3

Section 4: Analogies

Which shape or pattern on the right completes the second pair in the same way as the first pair?

01	
02	
03	
04	
05	

06	
07	
08	
09	
10	

End of section 4

Section 5: Odd One Out

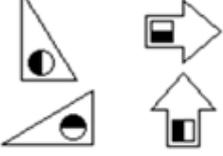
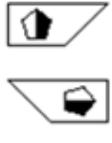
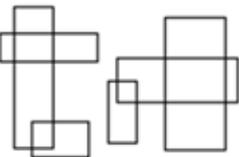
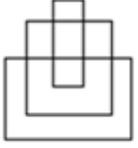
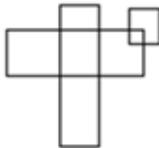
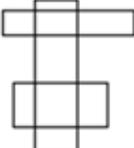
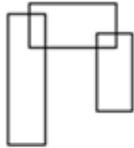
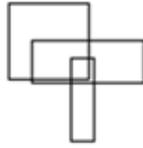
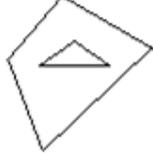
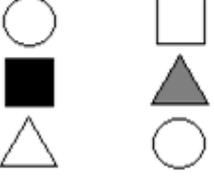
Choose which one of the pictures is most unlike the other four.

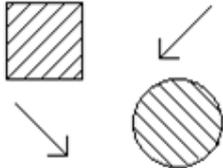
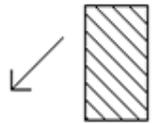
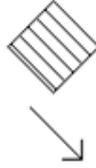
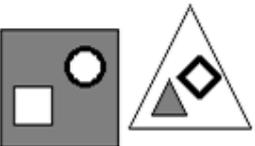
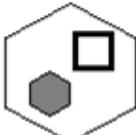
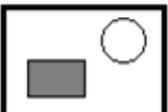
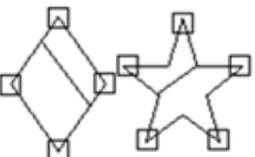
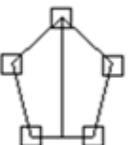
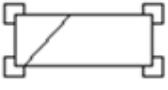
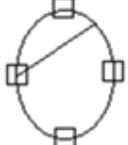
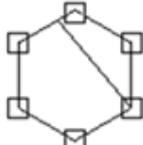
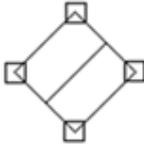
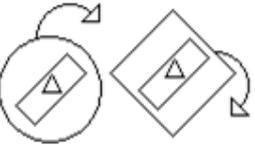
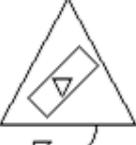
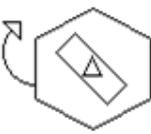
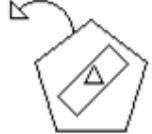
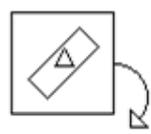
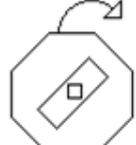
01	<p style="display: flex; justify-content: space-around; margin-top: 10px;"> a b c d e </p>
02	<p style="display: flex; justify-content: space-around; margin-top: 10px;"> a b c d e </p>
03	<p style="display: flex; justify-content: space-around; margin-top: 10px;"> a b c d e </p>
04	<p style="display: flex; justify-content: space-around; margin-top: 10px;"> a b c d e </p>
05	<p style="display: flex; justify-content: space-around; margin-top: 10px;"> a b c d e </p>

06	<p>a b c d e</p>
07	<p>a b c d e</p>
08	<p>a b c d e</p>
09	<p>a b c d e</p>
10	<p>a b c d e</p>

End of section 5

Section 6: Similarities

Which shape or pattern on the right belongs with the two on the left?		
01		    
02		    
03		    
04		    
05		    

06		     <p style="text-align: center;">a b c d e</p>
07		     <p style="text-align: center;">a b c d e</p>
08		     <p style="text-align: center;">a b c d e</p>
09		     <p style="text-align: center;">a b c d e</p>
10		     <p style="text-align: center;">a b c d e</p>

End of test

Answering Sheet – Non Verbal Reasoning

Section 1: Codes									
Q-01	Q-02	Q-03	Q-04	Q-05	Q-06	Q-07	Q-08	Q-09	Q-10
A <input type="checkbox"/>									
B <input type="checkbox"/>									
C <input type="checkbox"/>									
D <input type="checkbox"/>									
E <input type="checkbox"/>									

Section 2: Series									
Q-01	Q-02	Q-03	Q-04	Q-05	Q-06	Q-07	Q-08	Q-09	Q-10
A <input type="checkbox"/>									
B <input type="checkbox"/>									
C <input type="checkbox"/>									
D <input type="checkbox"/>									
E <input type="checkbox"/>									

Section 3: Matrices									
Q-01	Q-02	Q-03	Q-04	Q-05	Q-06	Q-07	Q-08	Q-09	Q-10
A <input type="checkbox"/>									
B <input type="checkbox"/>									
C <input type="checkbox"/>									
D <input type="checkbox"/>									
E <input type="checkbox"/>									

Section 4: Analogies									
Q-01	Q-02	Q-03	Q-04	Q-05	Q-06	Q-07	Q-08	Q-09	Q-10
A <input type="checkbox"/>									
B <input type="checkbox"/>									
C <input type="checkbox"/>									
D <input type="checkbox"/>									
E <input type="checkbox"/>									

Section 5: Odd one out									
Q-01	Q-02	Q-03	Q-04	Q-05	Q-06	Q-07	Q-08	Q-09	Q-10
A <input type="checkbox"/>									
B <input type="checkbox"/>									
C <input type="checkbox"/>									
D <input type="checkbox"/>									
E <input type="checkbox"/>									

Section 6: Similarities									
Q-01	Q-02	Q-03	Q-04	Q-05	Q-06	Q-07	Q-08	Q-09	Q-10
A <input type="checkbox"/>									
B <input type="checkbox"/>									
C <input type="checkbox"/>									
D <input type="checkbox"/>									
E <input type="checkbox"/>									

PAPER 1

The Answers – Non Verbal Reasoning

1. Codes		2. Sequences		3. Matrices		4. Analogies		5. Odd one out		6. Similarities	
01	B	01	E	01	E	01	E	01	B	01	B
02	C	02	C	02	E	02	E	02	D	02	B
03	D	03	E	03	B	03	D	03	D	03	B
04	D	04	E	04	D	04	E	04	D	04	C
05	E	05	E	05	C	05	C	05	B	05	B
06	D	06	B	06	C	06	B	06	E	06	A
07	C	07	A	07	E	07	E	07	C	07	A
08	C	08	D	08	C	08	D	08	B	08	C
09	A	09	B	09	A	09	A	09	D	09	D
10	B	10	B	10	D	10	B	10	C	10	D



Full Explanation

PAPER 1

Non Verbal Reasoning

Section 1: Codes

1. The first letter refers to the size of the shape of shapes, so this would have to be a B. The second letter relates to the number of shapes there are, so this would be an F. The third letter stands for the fill of the shape or shapes, so this is a P. The fourth letter represents the actual shape drawn, so this will be a Z. The answer BFPZ is therefore B.
2. The first letter refers to the outline whether it is thick or thin, so this is a G. The second letter represents the shape in the centre, three sided or four, so this letter would be a B. The third letter shows what the fill colour of the centre shape is, so this letter is a Y. The fourth letter stands for the fill colour of the outer shape and so the letter would be N. The answer GBYN is C.
3. The first letter shows what direction the outer heart is pointing, this has to be a letter not already seen as the sample shape is not pointing in the same direction as any of the others, therefore it is W. The second letter represents the direction of the inner heart shape, this has to be R. The third letter refers to the fill colour of the outer shape, so this is T. The fourth letter is for the small shape in the centre, whether it is a square or a circle, so this is an O. The answer WRTO is D.
4. The first letter represents the number of grey circles inside the shape, so this is the letter P. The second letter stands for how the shape has been divided up, into halves or quarters, so this is M. The third letter shows what the main outer shape is, this is an X. The fourth letter is for how many black circles there are inside, so this is G. The answer PMXG is D.

5. The first letter refers to the shape of the arrow, so it is a T. The second letter represents what the direction of the arrow is, as the sample shape points in a direction that is different to all the others it has to be a different letter and so is D. The third letter is for the extra shape on the other end of the arrow, so this is V. The fourth letter shows what colour the extra shape on the end is, so this has to be R. The answer TDVR is E.

6. The first letter represents the fill of the outermost shape, so it is E. The second letter refers to the fill of the next shape in, so this will be a T. The third letter shows what shape it is inside the circle, this has to be a different letter to those already seen as the sample shape is different to all the others, this letter is a U. The fourth letter represents the fill colour of the centre triangle, so this is an O. The answer ETUO is D.

7. The first letter refers to the angle of the line of shapes, so this will be an X. The second letter represents the number of circles filled in grey, this will have to be a letter not seen as the sample shape has three shaded and none of the other shapes do, so this is a U. The third letter shows what the outer shape is, so this is an M. The fourth letter stands for what the shapes inside actually are, so this is an O. The answer XUMO is C.

8. The first letter represents which shape is on top of the overlap, whether it is the shape at the top or the bottom of the line, so this is A. The second letter refers to what shapes are drawn, this will have to be a letter not yet seen as the sample shapes are different to the others, this letter has to be P. The third letter shows what direction the shapes go in, either up to the left or to the right, this letter will be a T. The fourth letter stands for the fill colour, so it has to be a W. The answer APTW is C.

9. The first letter represents the number of quarters shaded in grey, so this will be B. The second letter refers to how many quarters are just left white; this will be a different letter as the sample shape has no white quarters, so it will be a Y. The third letter stands for the main shape; this will have to be a P. The fourth letter shows how many quarters are dotted, this will be a U. The answer BYPU is A.

10. The first letter refers to the direction the inner shape is pointing, so it will be a different letter to those already seen as the sample shape is pointing in a different direction, it will have to be a Q. The second letter represents the direction of the outer shape, so it will be a W. The third letter shows the fill colour of the outer shape, so it will be an N. The fourth letter stands for the fill of the inner shape, this will be a U. The answer QWNU is B.

Section 2: Series

1. The whole pattern is reflected in the vertical line, the rectangles alternate which is overlapping the other, and a circle is added or removed in the pattern 1-2-3-2-1. The answer is therefore E.

2. The small circle (on its own) rotates position 90° anticlockwise each time, the larger circles' position is reflected in the vertical line, and the black and white fills swap places. The answer is C.

3. Both shapes, the circle and the pentagon, change size in the pattern: small-medium-large-small-medium... The lines cover 1 less shape each time, and the fill swaps between the pentagon and the circle. The answer is E.
4. Going anticlockwise three lines become dotted each time, and in the next box lines that were dotted have been removed. The centre shape alternates between a circle and a square, and the arrow rotates 90° anticlockwise. The answer is E.
5. The whole pattern is reflected in the vertical line each time, and the grey fill moves up or down one position. The answer is E.
6. The circles at the edge rotate 90° clockwise and one is added each time. The centre shape rotates 90° anticlockwise, the grey and black fills swap ends, and the semi circle rotates another 180° each time. The answer is B.
7. The pattern rotates 90° clockwise, the black fill in the circle swaps sides, and a line is added at alternate ends. The answer is A.
8. An extra sixth is filled in a clockwise direction, the fill colour swaps black / grey, and a line is removed from the square around the hexagon. The answer is D.
9. An extra circle is added around the star in an anticlockwise direction, and the black and white fills swap places between the star and the circles. The answer is B.
10. The whole pattern rotates 180° each time, a skinny arrow is added or removed in the pattern 1,2,3,1,2,3. The black fill also swaps between the skinny and the chunky arrows. The answer is B.

Section 3: Matrices

1. Solved horizontally. The pattern rotates 90° clockwise, except the inner shape which rotates 45° clockwise. The grey fill then swaps places with the white. The answer is E.
2. Solved horizontally. The pattern is reflected in the vertical line, and the 'arrows' reverse direction. The top small shape is then removed and the lower small shape moves into the centre to overlap the middle line. The answer is E.
3. Solved horizontally or vertically. The whole pattern rotates 90° clockwise from left to right and the dot changes colour so each row and column has one of each: grey, white, and black. The number of lines and triangles also change so each row and column will have 1, 2, and 3 triangles and lines. The answer is B.

4. Solved horizontally. The whole pattern is reflected in the vertical line and the two small shapes swap positions and sizes. The grey fill swaps between the centre small shape and outside the shapes. The line also changes between thick and thin. The answer is D.
5. Solved horizontally. Black and white fills swap shapes. The outer and the centre shapes swap sizes and positions, and the top left small shape move to the centre of the middle shape. The answer is C.
6. Solved horizontally or vertically. The stripes are rotated 90° and swap places between the centre shape and outside the shape. Each row and column needs one grey fill in the centre shape and one grey fill outside the shape. The answer is C.
7. Solved horizontally. The shapes in the corners swap places with the shape in the diagonally opposite corner. The black fills and the white fills swap, and the centre shape rotates 180° . The answer is E.
8. Solved horizontally. The shape rotates 90° clockwise but the stripes remain the same, they do not rotate with the shape. The outline swaps dotted for solid and the grey fill also swaps places. The answer is C.
9. Solved horizontally. The shape rotates 90° clockwise from left to right and also changes size so each row and column has a small, a medium and a large shape in. The large shapes all have a dashed outline, the medium ones have a solid line and the small ones have a dotted line. The centre shape changes so each row and column has one of each: circle, diamond, and star. The answer is A.
10. Solved vertically. The centre shapes rotate 180° and the outer shape swaps between a circle and a square. The answer is D.

Section 4: Analogies

1. The outer shape is reflected in the horizontal line and has its outline changed to dotted. The centre shape changes from black to white and moves out of the other shape to be positioned below it. The answer is E.
2. The bottom shape is flipped vertically while the 'sail' is flipped horizontally. The grey and white fills swap places. The answer is E.
3. The pattern rotates 90° anticlockwise and the outer shape shrinks. One of the smaller shapes inside is removed. The answer is D.
4. The whole pattern is reflected in the horizontal line or vertically flipped. The grey and white fills swap places. The answer is E.

5. The whole pattern rotates 90° anticlockwise and the grey and white fills swap places. The answer is C.
6. All the individual triangles are 'unfolded' and then the pattern is rotated 180° . The outer shape shrinks, moves to the centre, and is divided into quarters in the same way as the original shape was. The answer is B.
7. The centre shape rotates 180° . The line(s) is reflected in the vertical line and swaps thin to thick. The small outer shapes get larger and move to the new largest angle created by the crossing of the line and the main shape. The answer is E.
8. The whole pattern is reflected in the vertical line. The two smaller shapes swap places and also swap fill colours. The stripes rotate 90° . The answer is D.
9. The main shape and the smaller outside shape both rotate 180° , but then the smaller outside shape swaps sides. The small shape in the centre does not rotate but simply swaps to the other half of the larger shape. The stripes rotate 90° . The answer is A.
10. The two shapes swap positions and sizes. The shape which started in the centre is also reflected in the vertical line. The answer is B.

Section 5: Odd one out

1. The only one with more black dots than white is B.
2. The only one with a straight line dividing the ellipse in half exactly is D.
3. The only one with a pentagon in the middle, instead of a quadrilateral, is D.
4. The only one where the two shapes are not the same but just different sizes is D.
5. The only one where the difference in number between the two groups of shapes is not 1 is B.
6. The only one where the line comes from a corner and not an edge is E.
7. The only one where there is not one less circle than the number of edges is C.
8. The only one where the arrow line is parallel to the stripes is B.
9. The only one where the number of shapes is not the same as the number of edges is D.
10. The only one where the circle is overlapping an edge, and not a corner, is C

Section 6: Similarities

1. There has to be four or six lines; the lines have to be straight and not diagonal; the lines are divided into pieces according to the number of lines there are. The answer is B.
2. The outer shape has a 90° anticlockwise rotation underneath and the inner shape has a 90° clockwise rotation in the shape underneath. The answer is B.
3. There has to be three rectangles all of different sizes. Two of the rectangles overlap on their corners and the third overlaps another completely. The answer is B.
4. There has to be an irregular quadrilateral with a triangle inside, and one of the shapes must be filled in grey. The answer is C.
5. The shapes have to be in a vertical line and always in the same order (circle, square, triangle, circle, square). The centre shape is filled in grey or black and the other two are both white. The answer is B.
6. There has to be one shape inside the larger one which is the same shape as the larger one, and both of these are white. There are also two other shapes which are different to each other and the outer shape; these are both filled in grey. The answer is A.
7. There has to be an arrow and another shape one above the other. The shape has diagonal stripes and the arrow is at 90° to the stripes. The answer is A.
8. There has to be two shapes the same: one larger and one smaller one inside it, one of these is grey. There is also another shape which is different, this one has a bold outline and is just left white. The answer is C.
9. There has to be a square overlapping each corner, but not covering the corners up. There is also a line diagonally through the shape but not dividing the shape into equal halves. The answer is D.
10. There has to be a curved arrow pointing clockwise. Inside the shape is a diagonal rectangle from bottom left to top right with an upwards pointing isosceles triangle inside. The answer is D.