Connectivity. Variant 1.

1. Find the diameter, the radius and centers of the given graph.
2. Find the vertex connectivity and the edge connectivity.
3. Find a minimum vertex cut for vertices b, h.
4. Find a maximum set of vertex-independent paths $< b, h >$.

	a	b	c	d	e	f	g	h
a					1		1	1
b			1		1		1	
c		1		1	1			
d			1			1		
e	1	1	1				1	
f				1				1
g	1	1			1			1
h	1					1	1	

5. Construct the quotient graph for the given graph and determine its type of connectivity.

	a	b	c	d	e	f	g	h
a			1	1				1
b			1				1	
c	1							
d							1	
e	1					1		1
f		1			1			
g				1				
h								

6. By using operations with Boolean matrices find all pairs of vertices connected by paths of the length 3.

7. By using Warshall algorithm find all pairs of vertices connected by paths going only through vertices $\{b, c, e\}$.

	a	b	c	d	e
a				1	
b	1				
c	1				1
d			1		
e		1	1		

Connectivity. Variant 2.

1. Find the diameter, the radius and centers of the given graph.

2. Find the vertex connectivity and the edge connectivity.

3. Find a minimum vertex cut for vertices c, f.

4. Find a maximum set of vertex-independent paths $< c, f >$.

	a	b	c	d	e	f	g	h
a		1	1				1	
b	1				1		1	1
c	1							
d						1	1	
e		1					1	
f				1				1
g	1	1		1	1			1
h		1				1	1	

5. Construct the quotient graph for the given graph and determine its type of connectivity.

	a	b	c	d	e	f	g	h
a		1		1				1
b					1		1	
c				1				
d								
e	1		1			1		
f								1
g				1				
h							1	

6. By using operations with Boolean matrices find all pairs of vertices connected by paths of the length 3.

7. By using Warshall algorithm find all pairs of vertices connected by paths going only through vertices $\{b, d, e\}$.

	a	b	c	d	e
a		1			1
b			1		
c		1		1	
d	1		1		
e		1	1		

Connectivity. Variant 3.

1. Find the diameter, the radius and centers of the given graph.
2. Find the vertex connectivity and the edge connectivity.
3. Find a minimum vertex cut for vertices a, d.
4. Find a maximum set of vertex-independent paths $< a, d >$.

	a	b	c	d	e	f	g	h
a		1	1				1	1
b	1		1					1
c	1	1			1	1		
d							1	1
e			1					
f			1					1
g	1			1				
h	1	1		1		1		

5. Construct the quotient graph for the given graph and determine its type of connectivity.

	a	b	c	d	e	f	g	h
a							1	
b	1				1		1	
c						1		
d								
e		1	1			1		1
f		1						1
g				1				
h				1				

6. By using operations with Boolean matrices find all pairs of vertices connected by paths of the length 3.

7. By using Warshall algorithm find all pairs of vertices connected by paths going only through vertices $\{a, c, d\}$.

	a	b	c	d	e
a		1		1	
b			1		
c				1	1
d	1		1		
e		1		1	

Connectivity. Variant 4.

1. Find the diameter, the radius and centers of the given graph.

2. Find the vertex connectivity and the edge connectivity.

3. Find a minimum vertex cut for vertices a, h.

4. Find a maximum set of vertex-independent paths $< a, h >$.

	a	b	c	d	e	f	g	h
a		1				1	1	
b	1				1	1		1
c				1	1			
d			1			1		
e		1	1				1	
f	1	1		1			1	1
g	1				1	1		1
h		1				1	1	

5. Construct the quotient graph for the given graph and determine its type of connectivity.

	a	b	c	d	e	f	g	h
a		1	1	1			1	
b					1	1		
c								1
d		1	1					
e								
f	1							1
g				1	1			
h							1	

6. By using operations with Boolean matrices find all pairs of vertices connected by paths of the length 3.

7. By using Warshall algorithm find all pairs of vertices connected by paths going only through vertices $\{b, c, d\}$.

	a	b	c	d	e
a				1	1
b			1		
c	1				
d			1		1
e	1	1			