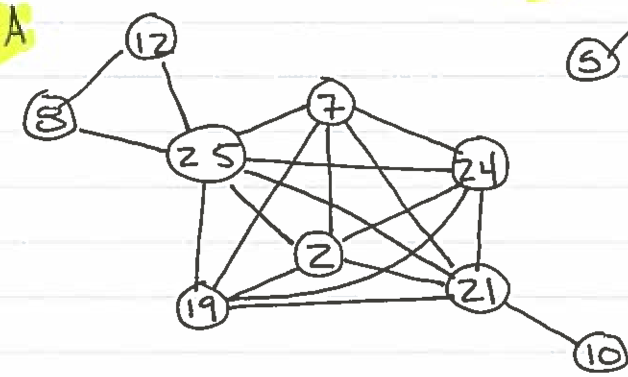
A

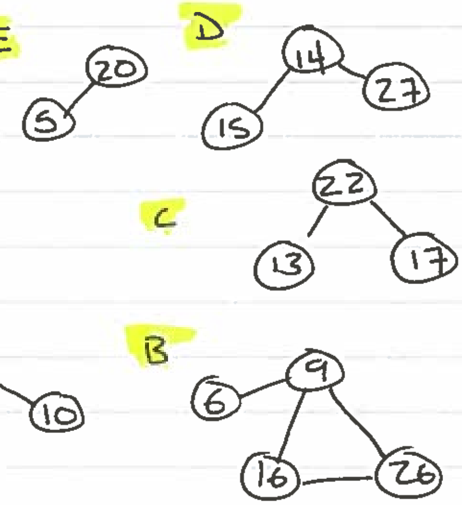
E

D

C

B

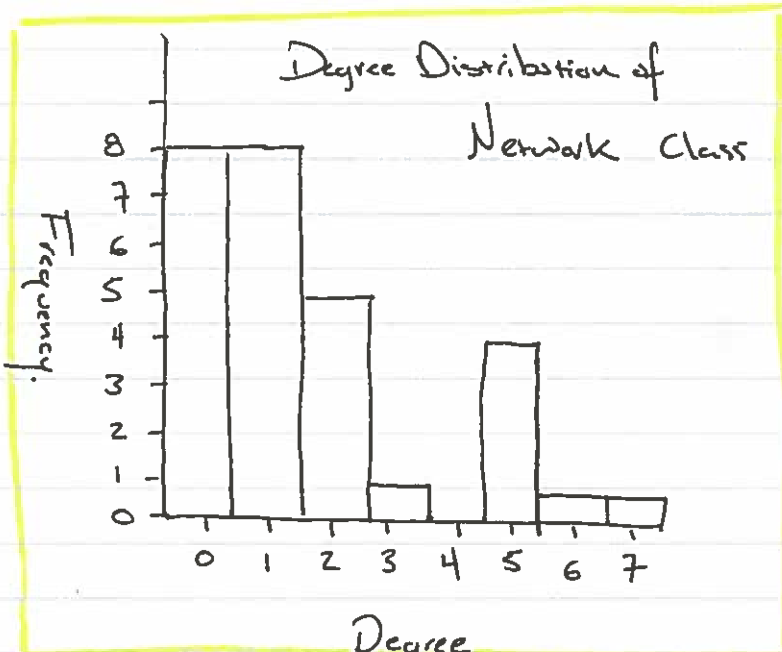




Node	k
2	5
5	1
6	1
7	5
9	3
10	1
12	2
13	1
14	2
15	1
16	2
17	1
19	5
20	1
21	6
22	2
24	5
25	7
26	2
27	1

nodes: 0, 1, 3, 4, 8, 11, 18, 23 have K = 0

K	freq.
0	8
1	8
2	5
3	1
4	∅
5	4
6	1
7	1



node i	C_i
9	1/3
14	0
19	1
21	2/3
25	11/21

← using the formula .... $C_i = \dfrac{2L_i}{k_i(k_i-1)}$

node i	L_i	k_i	C_i
9	1	3	$1/3 = 0.\overline{3}$
14	0	2	0
19	10	5	1
21	10	6	$2/3 = 0.\overline{6}$
25	11	7	$11/21 = 0.5238$

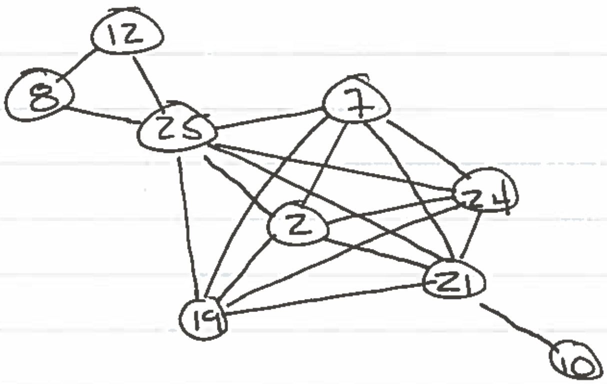
C. The network has five components $(N>1)$. There sizes are:

Component i	N_i
A	9
B	4
C	3
D	3
E	2

There are also 8 more components (not drawn) of $N = 1$ for a total of

12 components

~~d.~~ A single giant component is defined under the evolution of a random network. A giant componett generally emerges in a random network a $\langle K \rangle > 1$. We cannot, however claim to have a giant component in our network class graph because the process by which students ~~in~~ enroll in the course with their peers ~~in~~ is not a random process. We see evidence of this by having a $\langle K \rangle \gg 1$ at $\langle K \rangle = 1.93$ while observing many components of similar size that are NOT connected by definition.



Nodes: Shortest Distance (path length) from node to node.

	2	7	8	10	12	19	21	24	25
2	0	1	2	2	2	1	1	1	1
7	1	0	2	2	2	1	1	1	1
8	2	2	0	3	1	2	2	2	1
10	2	2	3	0	3	2	1	2	2
12	2	2	1	3	0	2	2	2	1
19	1	1	2	2	2	0	1	1	1
21	1	1	2	1	2	1	0	1	1
24	1	1	2	2	2	1	1	0	1
25	1	1	1	2	1	1	1	1	0

Diameter is the longest shortest path at 3