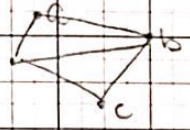
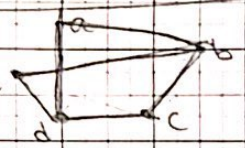
Will May M12: HW

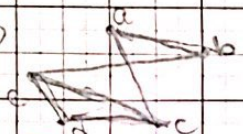
12.1 1.) a.) total degree: 14 c.) degree of 6: 1
b.) neighbors of 5: {1, 2, 3, 6, 4} d.) adjacent to 3: 2, 5

3.) a.)  Yes b.)  Yes

4.) a.) 12 edges; yes H is a regular
b.) 10 edges; yes H is a regular
c.) Infinite
d.) C_4

12.2 1.) a.) 

b.) 

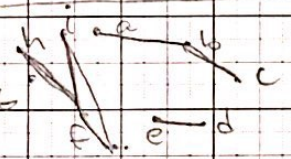
c.) 

2.) a.)
1 → 2 5
2 → 1 5 3
3 → 2 5
4 → 5
5 → 1 2 3 4 6
6 → 5

b.)

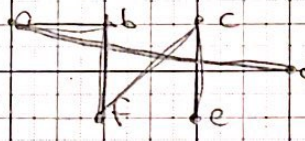
	1	2	3	4	5	6
1	0	1	0	0	1	0
2	1	0	1	0	1	0
3	0	1	0	0	1	0
4	0	0	0	0	1	0
5	1	1	1	1	0	1
6	0	0	0	0	1	0

3.) a.) Yes c.) No
b.) Yes d.) Yes

12.4 1.) a.) 

components: {a, b, c}, {e, d}, {i, j, f, h}, {g}

b.) {a}, {b}, {c}, {d}, {e}

c.) 

{a, b, c, d, e, f}

12.4 - 2.) a.) edge - 2 vertex - 1

b.) edge - 1 vertex - 1

c.) edge - 3 vertex - 3

4.) a.) If every pair is 2-edge connected, then graph G is 2-edge connected

b.) Yes, because if the graph is 2-edge connected. then any pair of edges are connected

c.) Yes. My answer was justified in the explanation.

12.5 1.) a.) <a, b, c, a, d, c, f, b, e, d, f, a>

b.) <b, a, c, d, a, f, b, e, d, f>

c.) There is more than 2 vertices having odd degree

d.) <a, b, c, a, d, c, g, f, b, e, d, f, a>