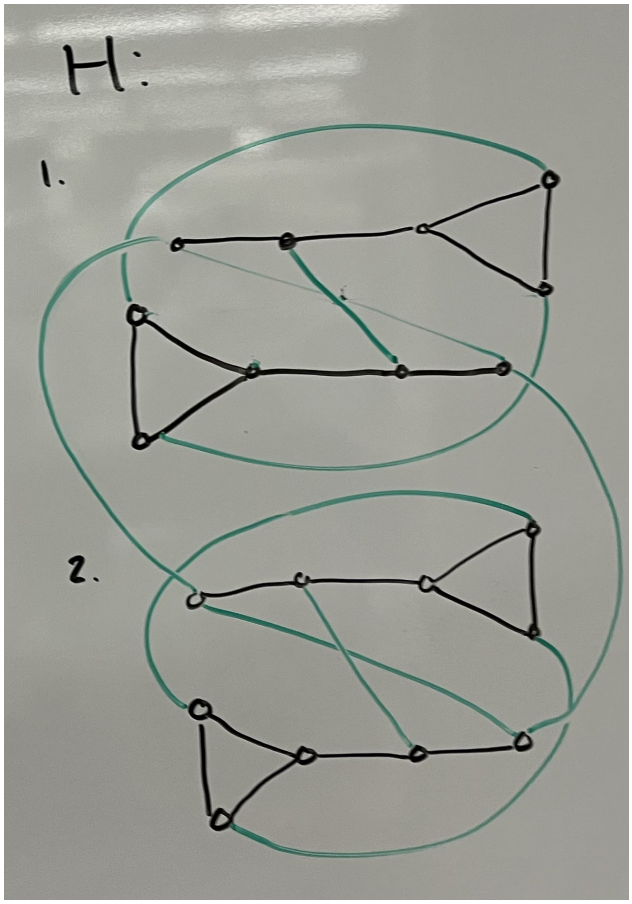
2.20 Show that if G is a connected graph that is not regular, then G contains adjacent vertices u and v such that deg(u) > deg(v).

2.22 

order = 20

2.26

2.32 Determine if the following sequences are graphic. If so, construct a graph.

b Start: 6,3,3,3,3,2,2,2,2,1,1
Remove 6 and subtract 1 from the first 6 remaining numbers: 2,2,2,2,1,1,1,1,1,1
Remove 2 and subtract 1 from the first 2 remaining numbers: 1,1,2,1,1,1,1,1,1
Remove 2 and subtract 1 from the first 2 remaining numbers: 1,1,1,1,1,1,1
Remove 1 and subtract 1 from the first remaining number: 1,1,1,1,0
Remove 1 and subtract 1 from the first remaining number: 1,1,0,0,0
Remove 1 and subtract 1 from the first remaining number: 0,0,0,0
All zeros, so the sequence is graphic.

d Start: 7,5,4,4,4,3,2,1
Remove 7 and subtract 1 from the first 7 remaining numbers: 4,3,3,3,2,1,0
Remove 4 and subtract 1 from the first 4 remaining numbers: 2,2,2,1,0,0

Remove 2 and subtract 1 from the first 2 remaining numbers: 1,1,1,0,0,0
Remove 1 and subtract 1 from the first remaining number: 1,1,0,0,0
Remove 1 and subtract 1 from the first remaining number: 1,0,0,0,0
Remove 1 and subtract 1 from the first remaining number: 0,0,0,0
All zeros, so the sequence is graphic.

2.33