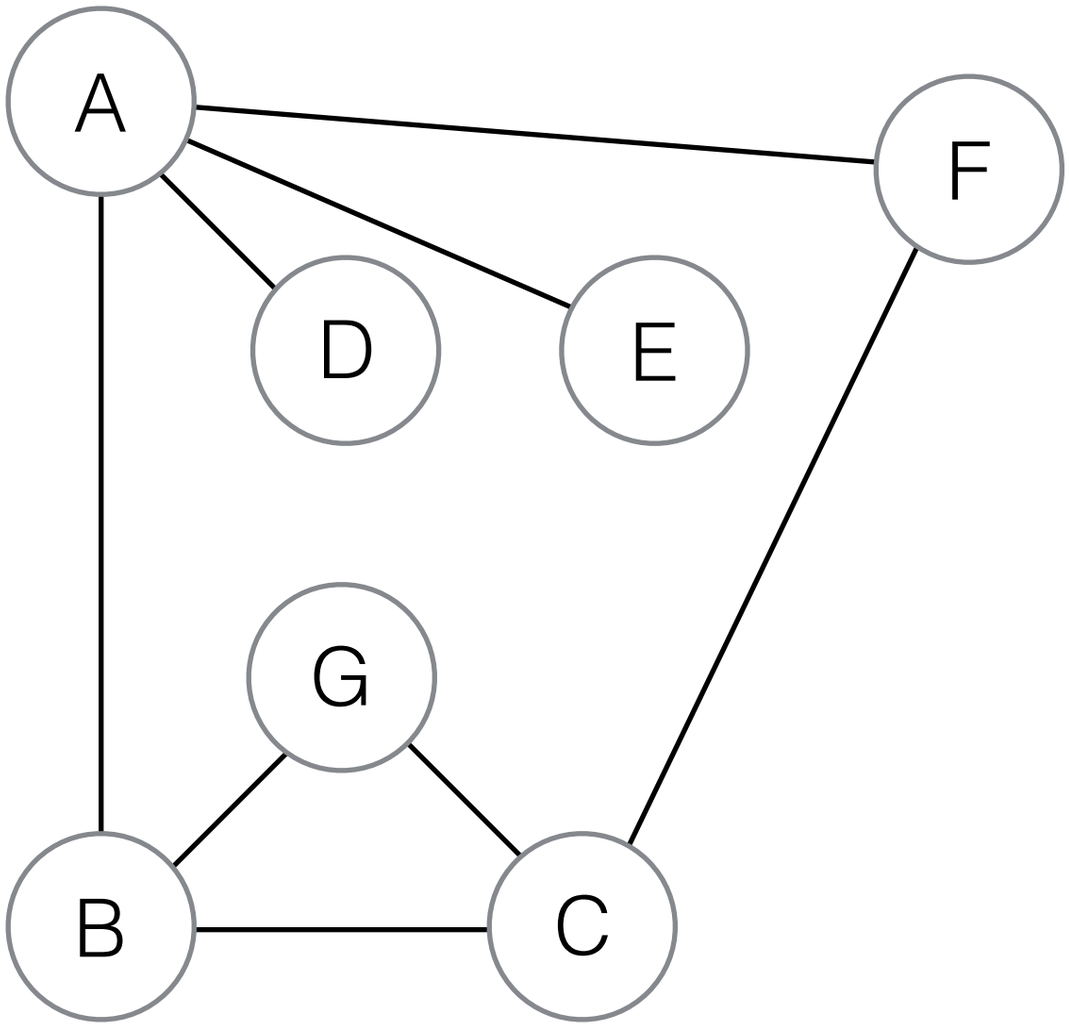
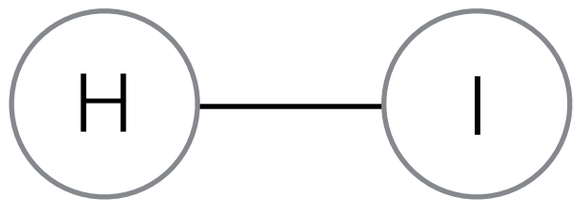
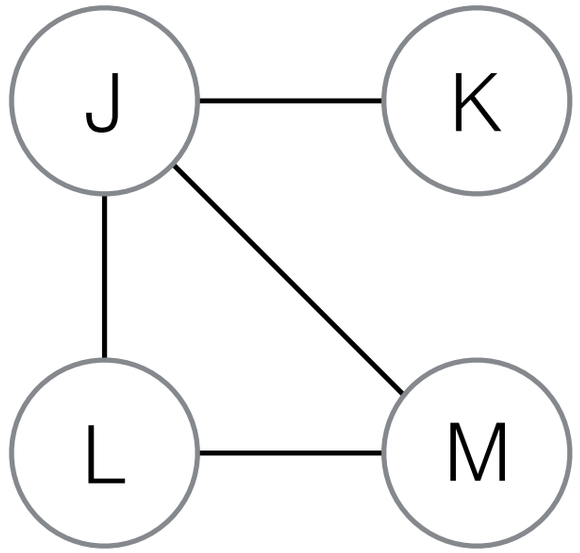
DFS

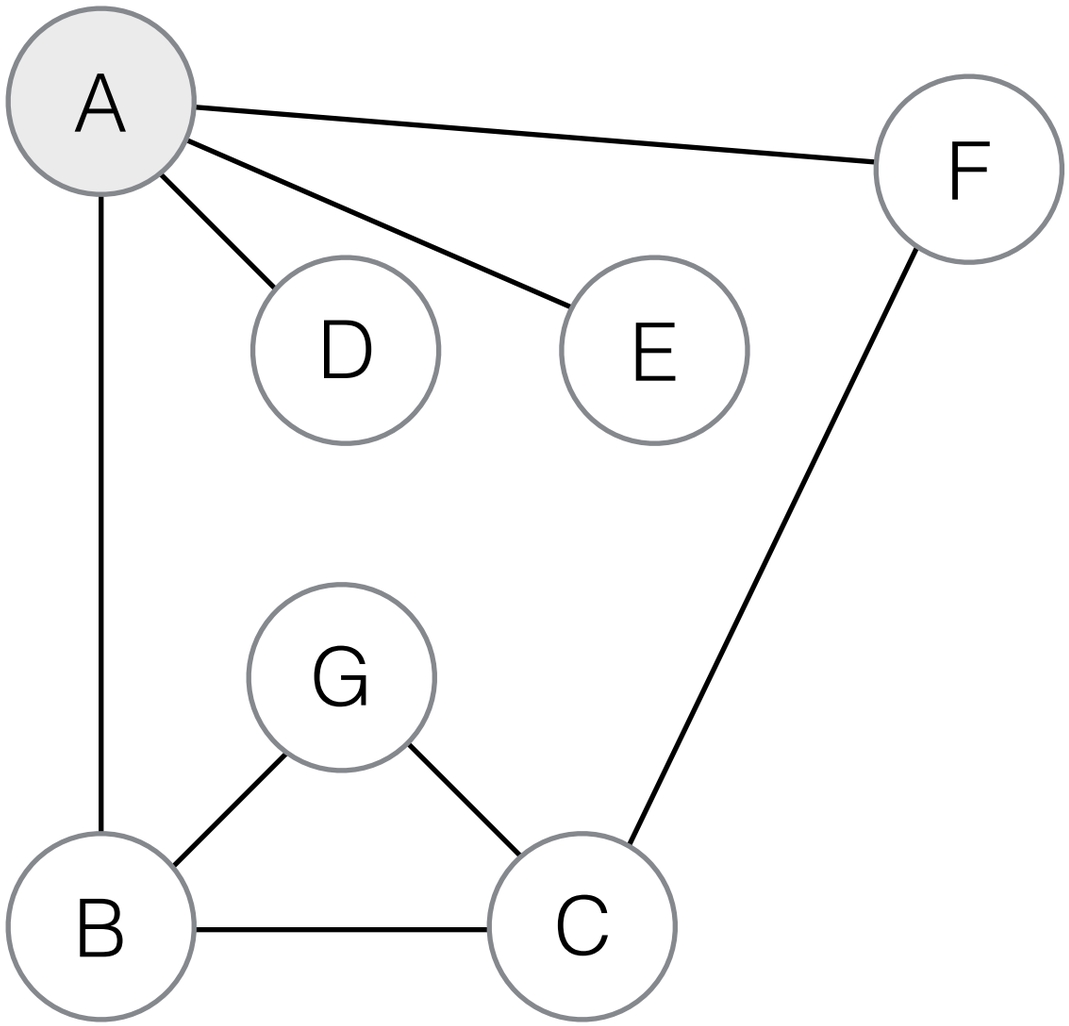
```
dfs(G):
    foreach node v in G
        color(v) = white
        pred(v) = null

    foreach node v in G
        if color(v) == white
            dfsVisit(G, v, color, pred)

    return pred
```

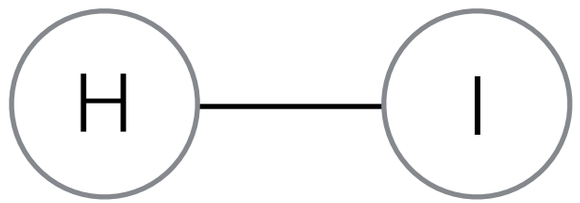
```
dfsVisit(G, u, color, pred):
    color(u) = grey

    foreach neighbor v of u
        if color(v) == white
            pred(v) = u
            dfsVisit(G, v, color, pred)

    color(u) = black
```

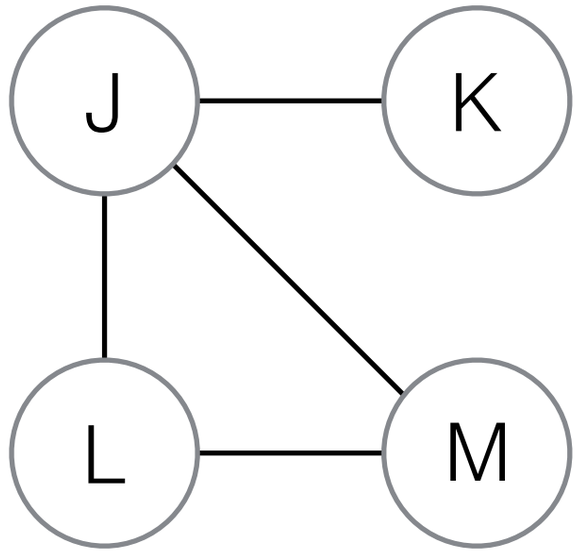

A
F
D
E
G
B
C

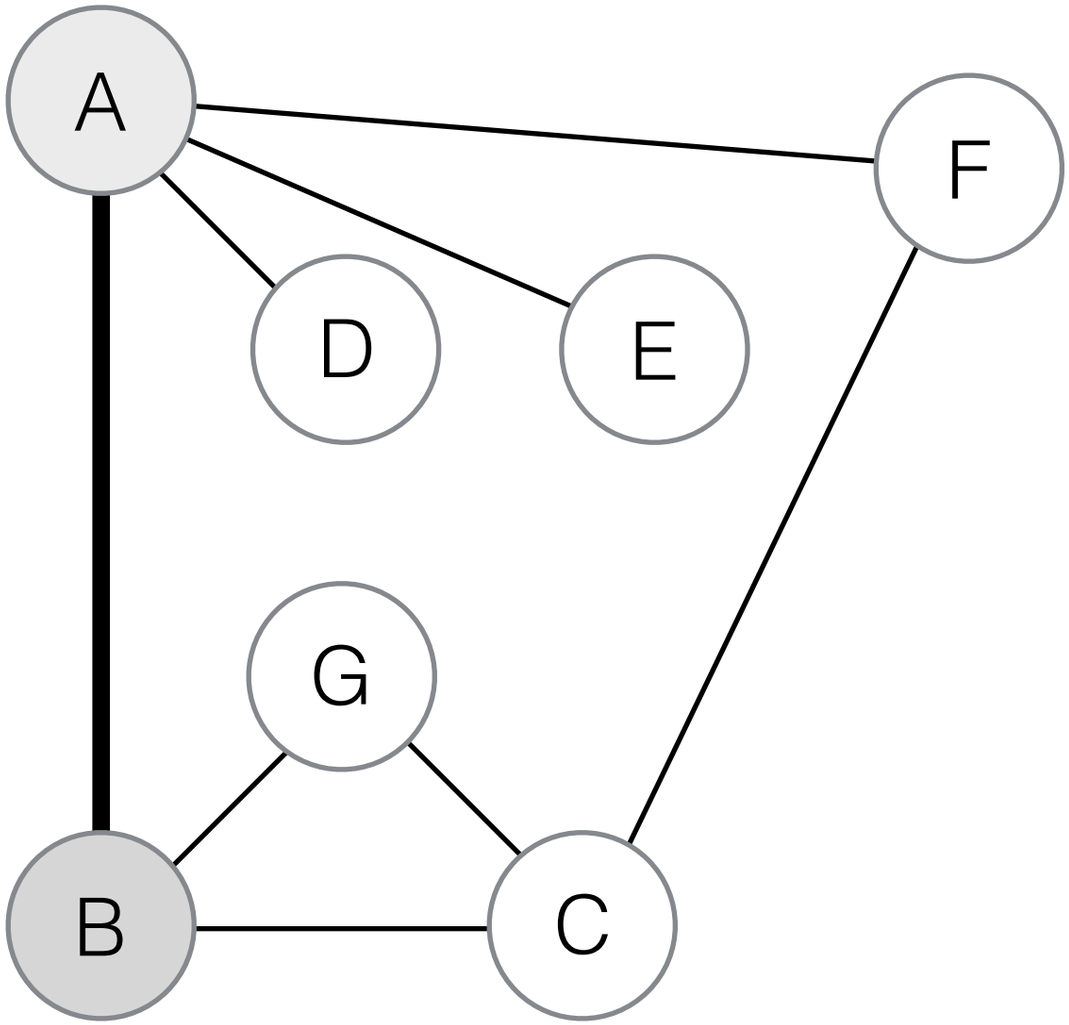

H
I

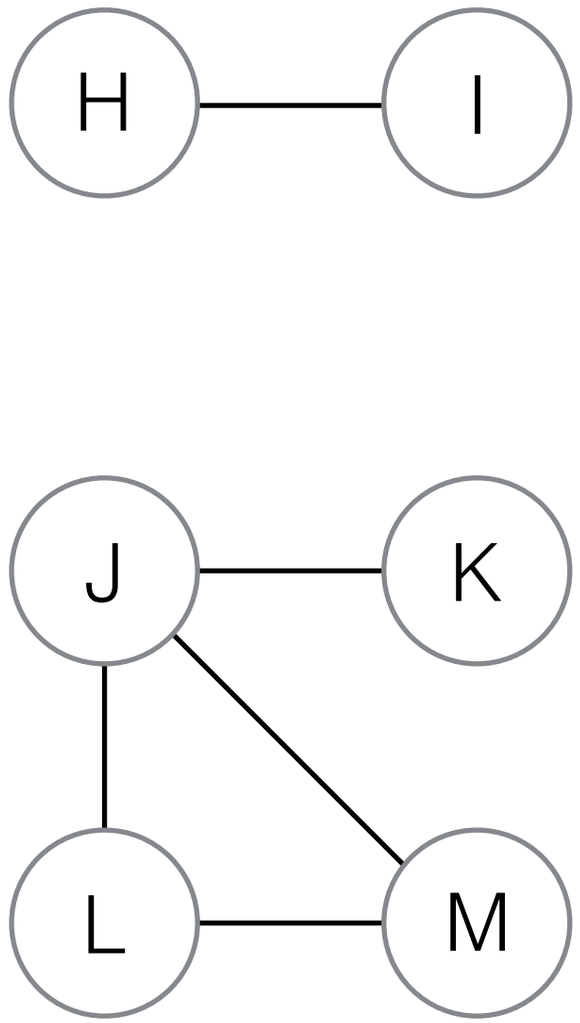

J
K
L
M

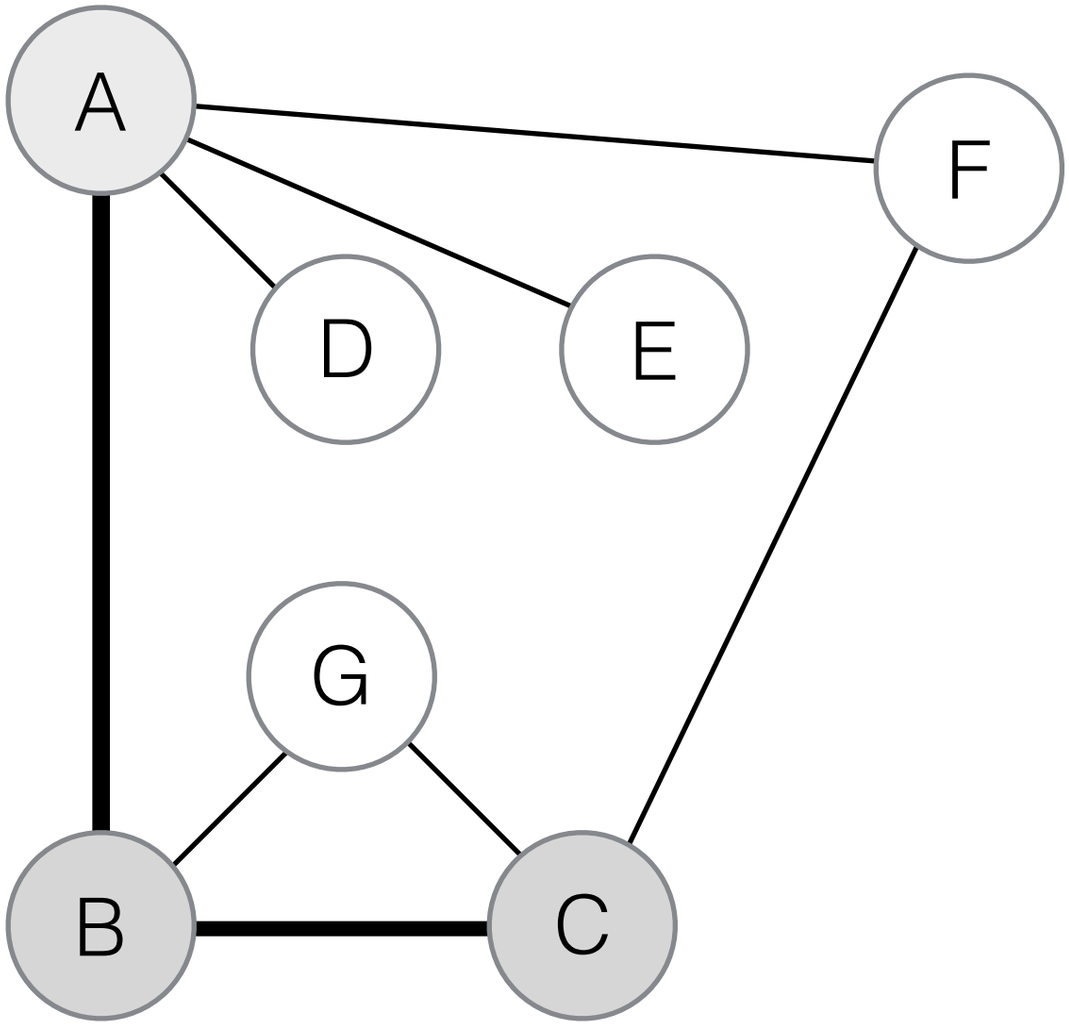

A
F
D
E
G
B
C

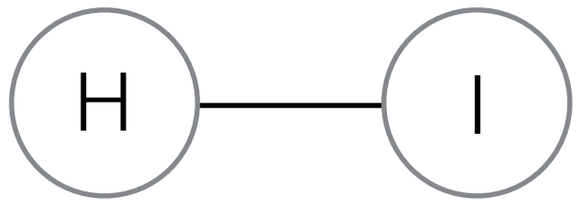

H
I

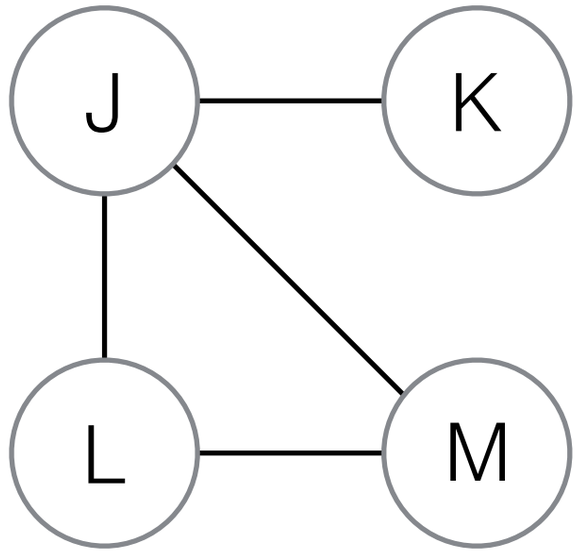

J
K
L
M

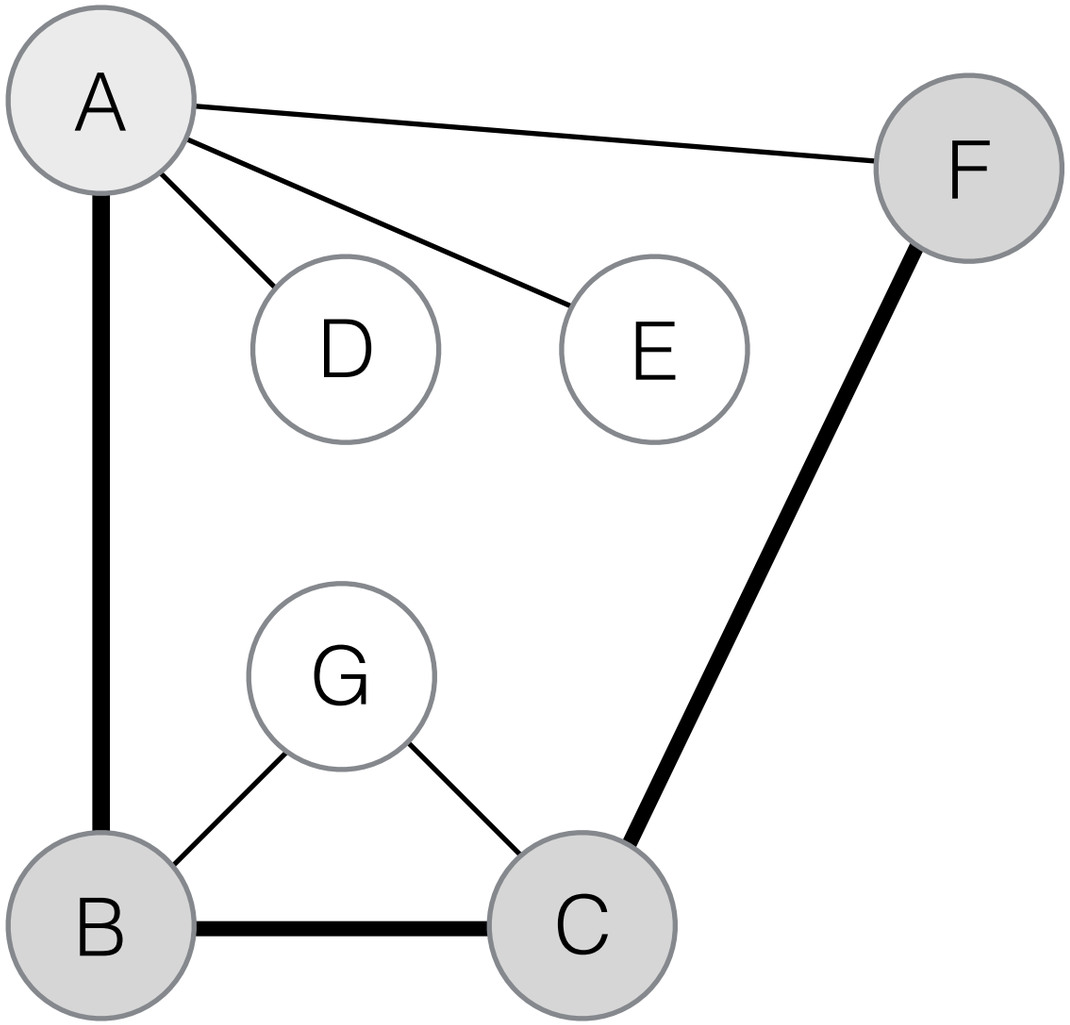

A
F
D
E
G
B
C

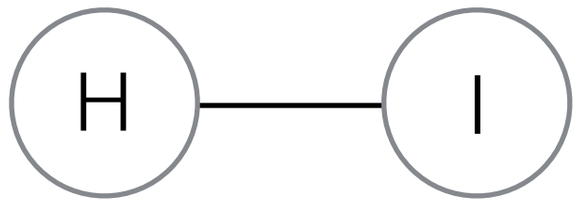

H
I
J
K
L
M

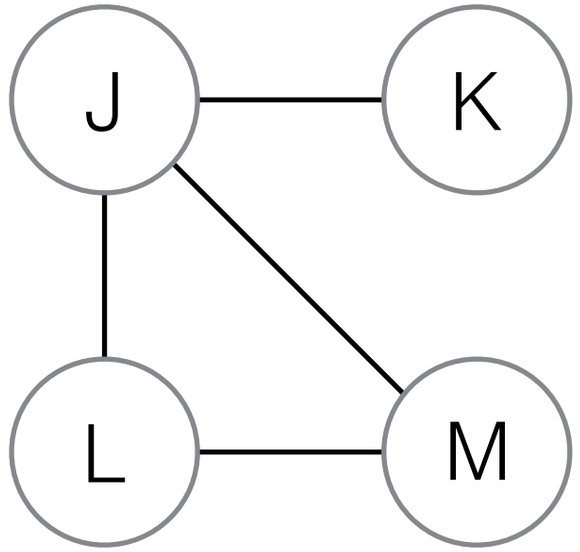

A
F
D
E
G
B
C

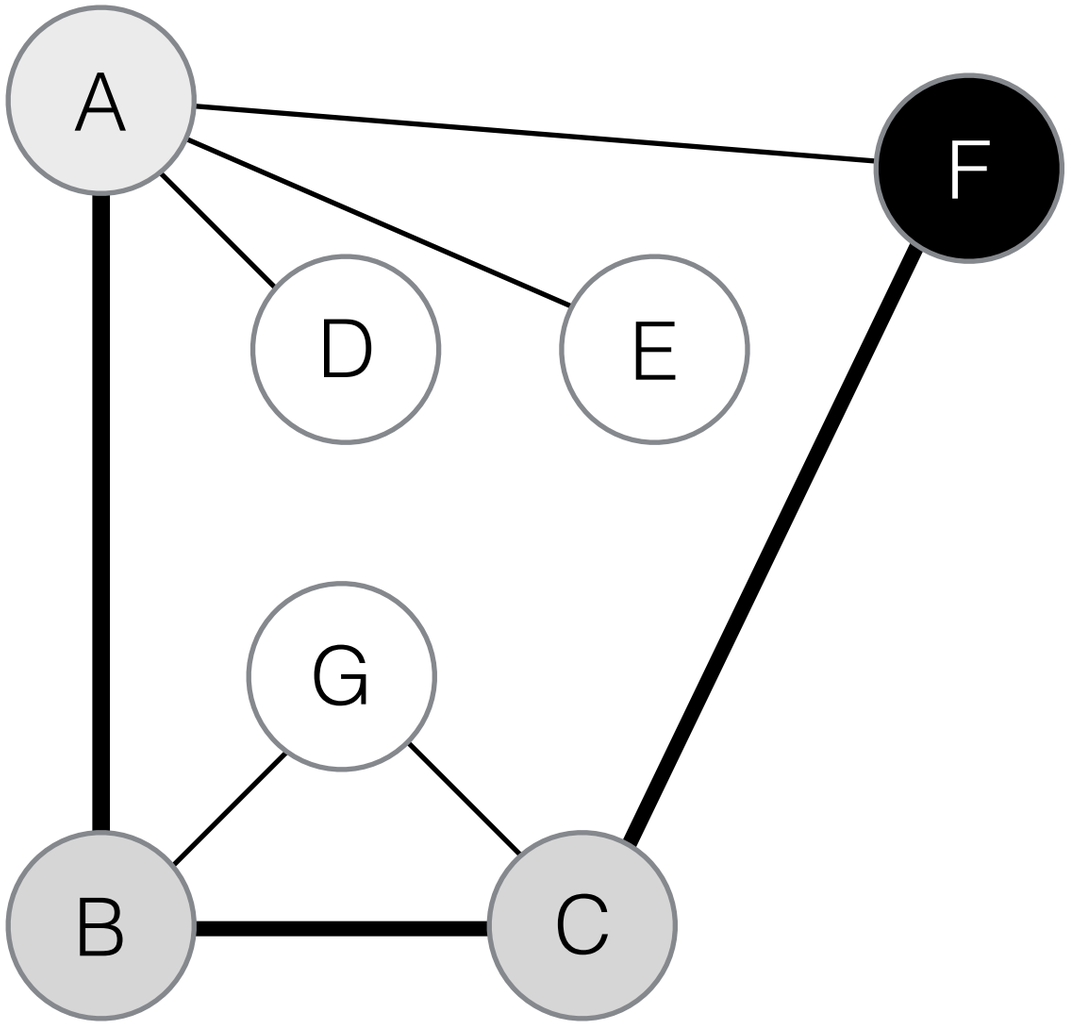

H
I

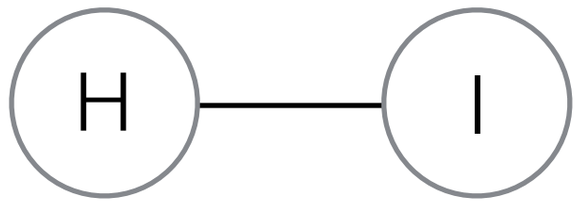

J
K
L
M

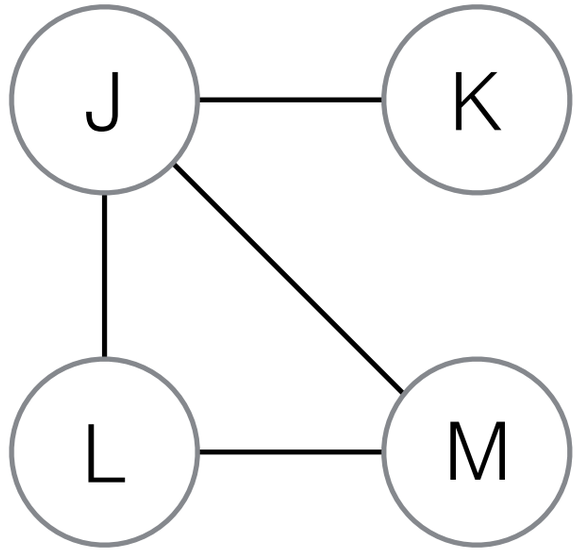

A
F
D
E
G
B
C

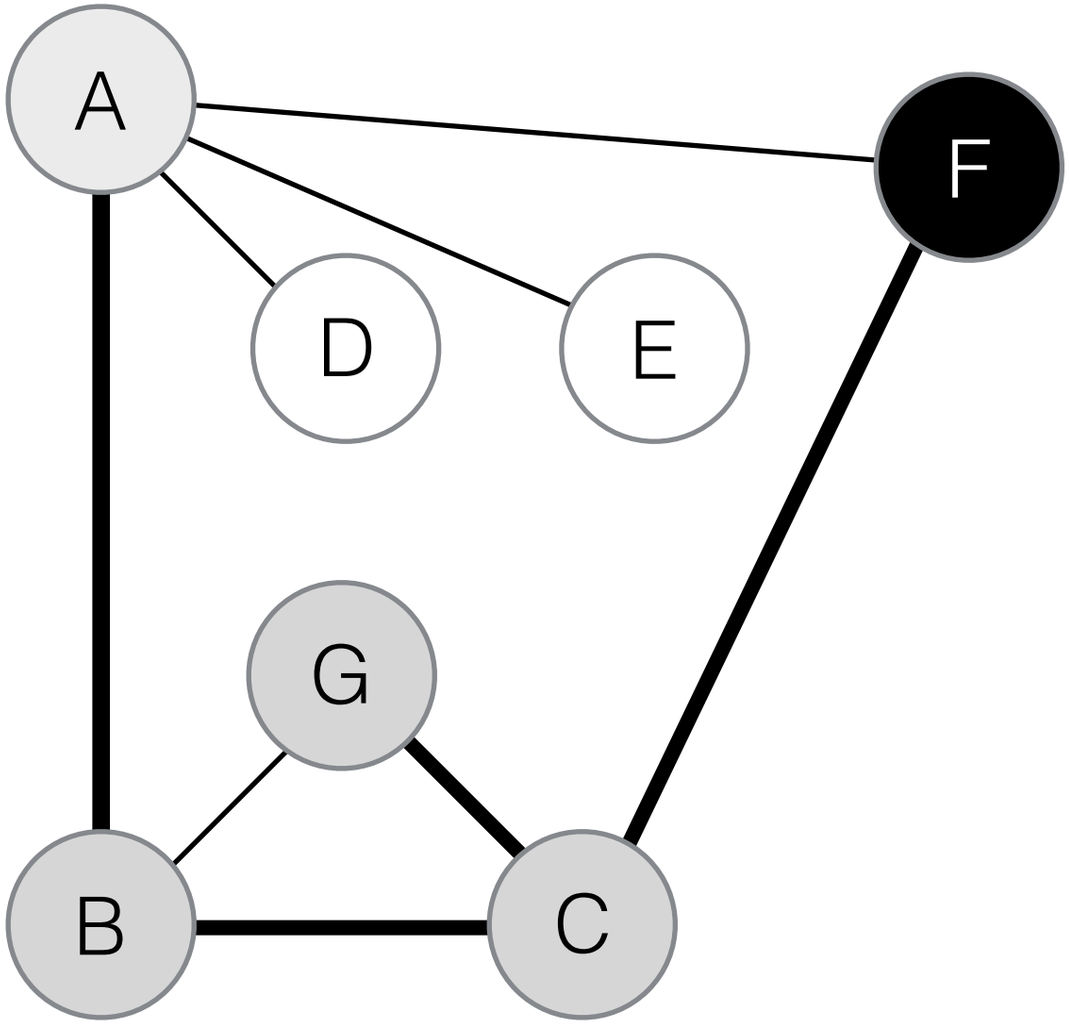

H
I

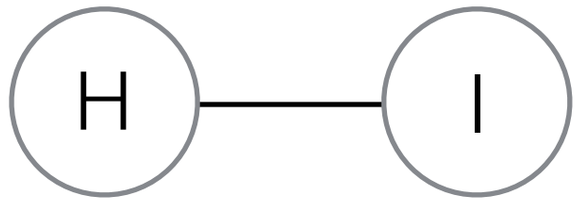

J
K
L
M

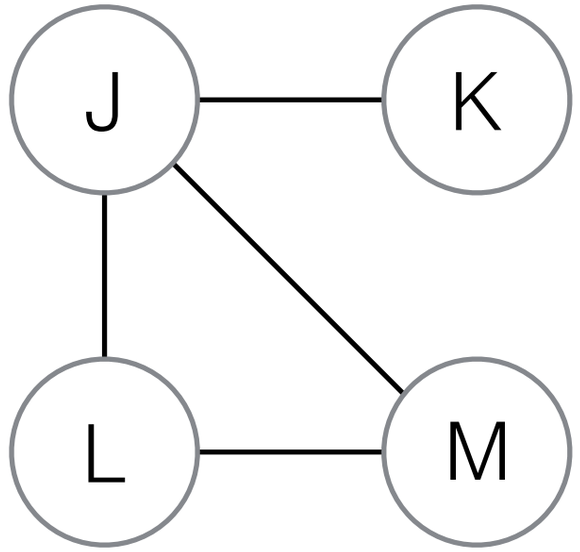

A
F
D
E
G
B
C

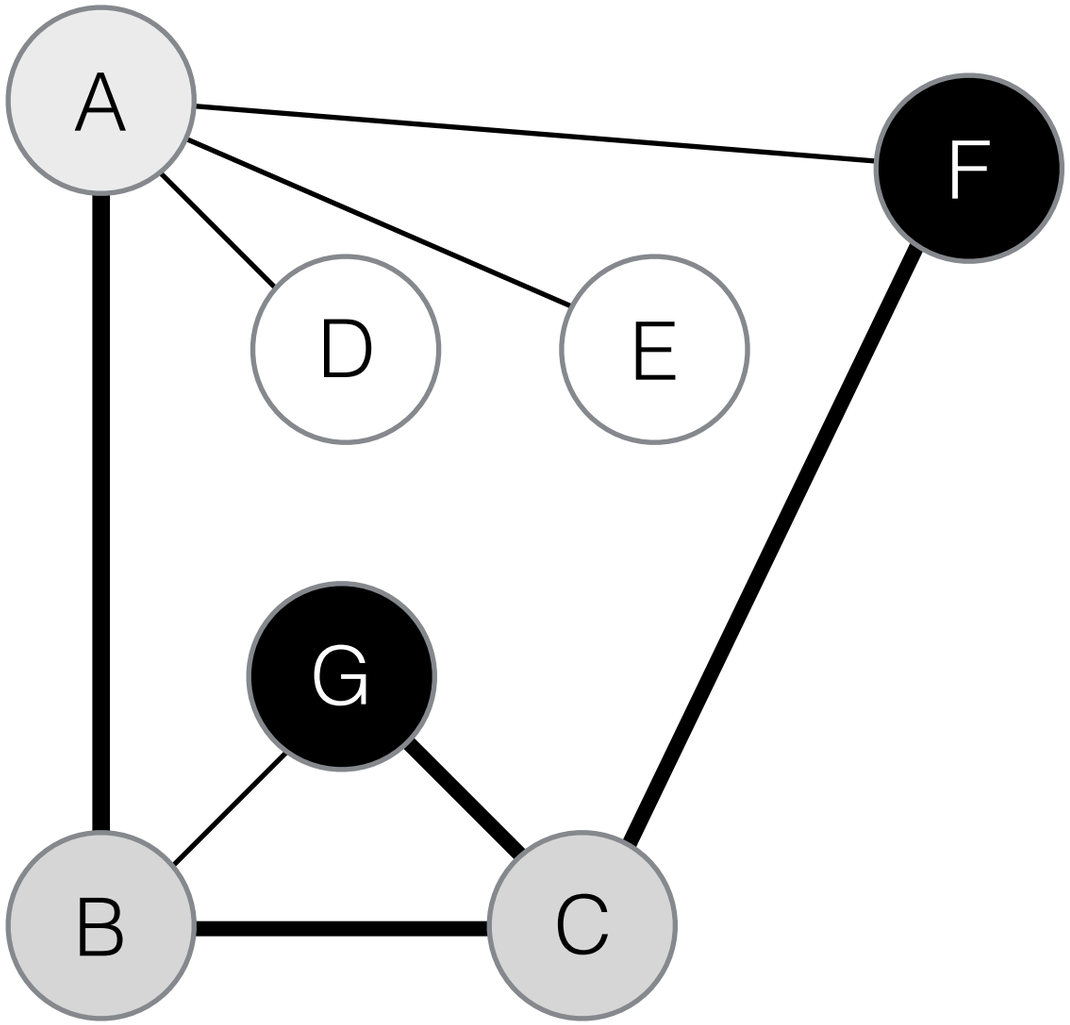

H
I

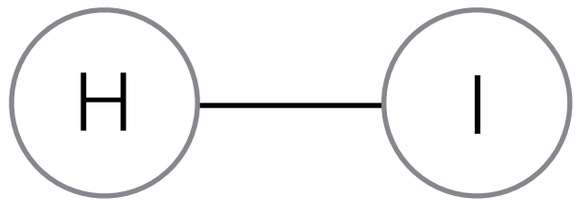

J
K
L
M

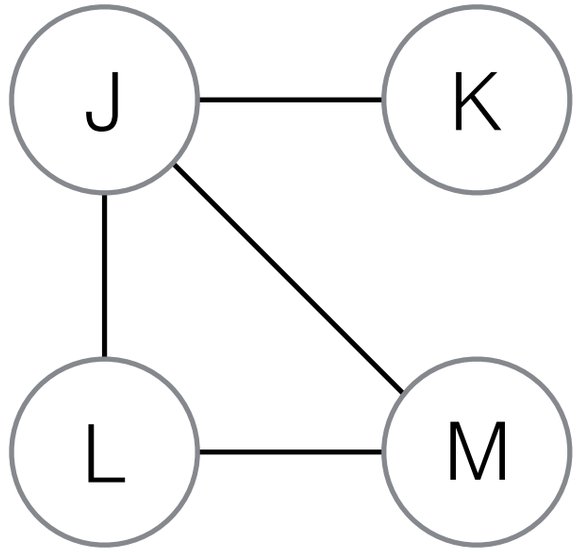

A
F
D
E
G
B
C

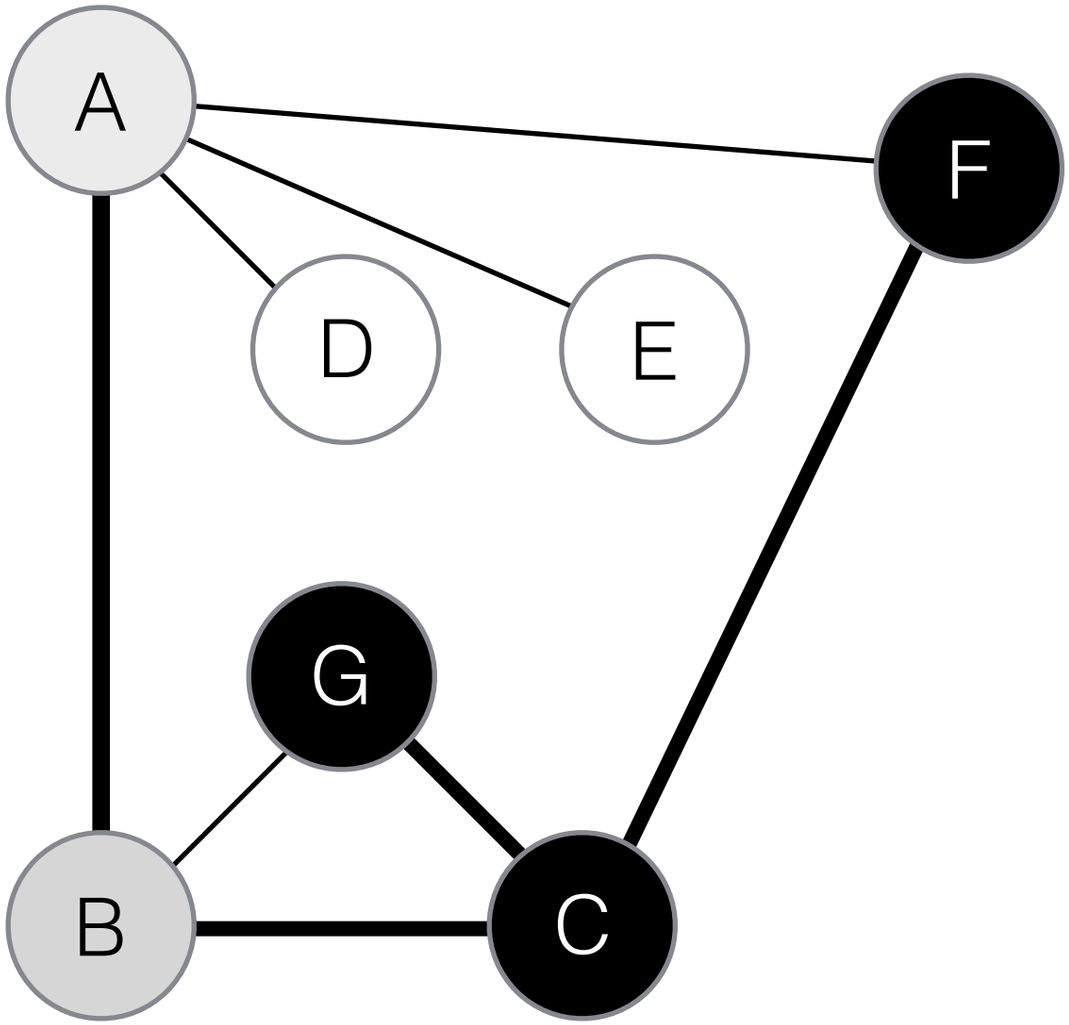

H
I

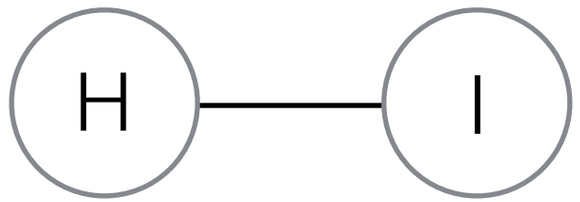

J
K
L
M

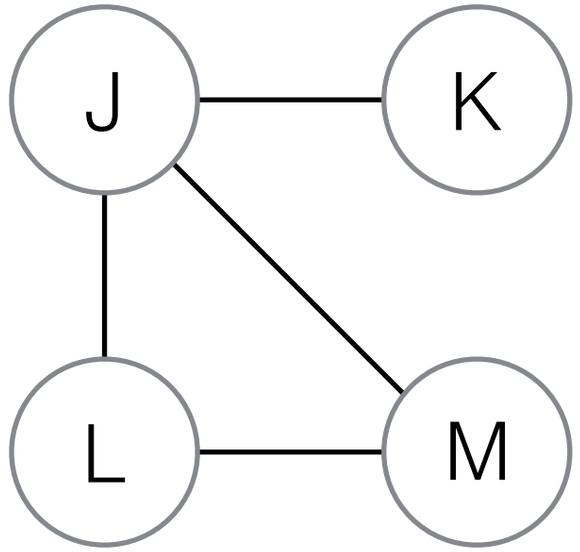

A
F
D
E
G
B
C

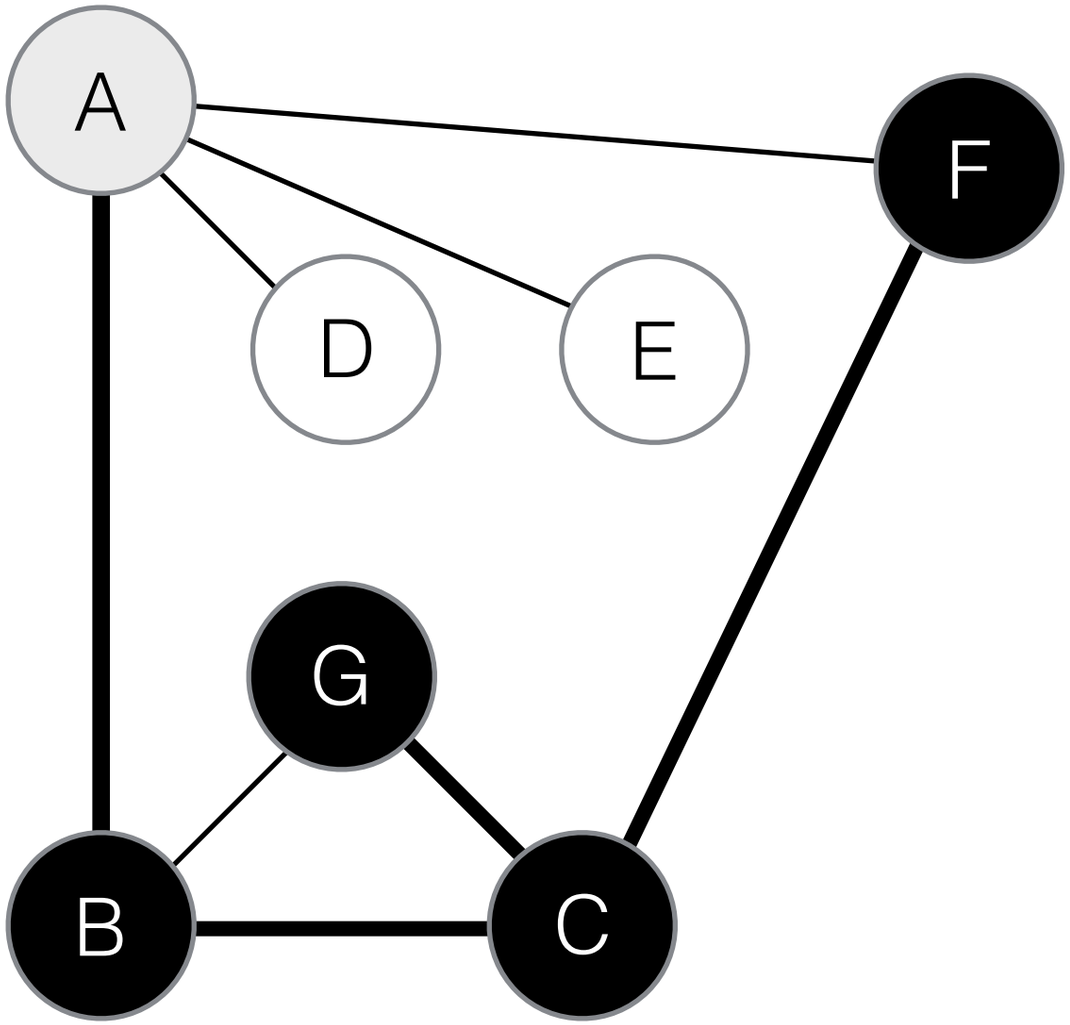

H
I

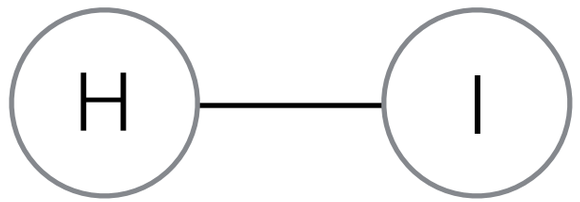

J
K
L
M

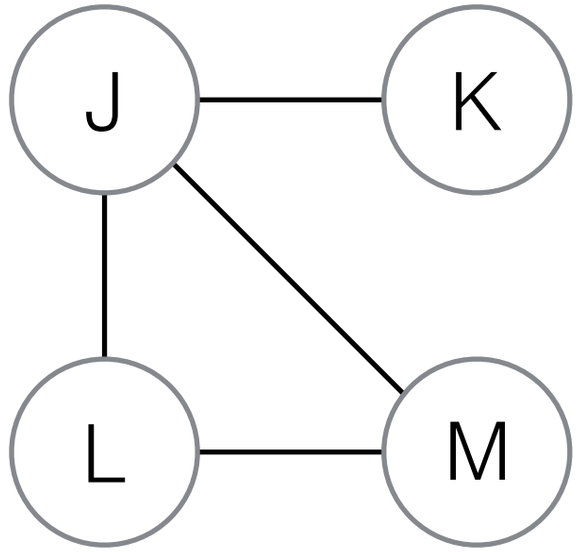

A
F
D
E
G
B
C

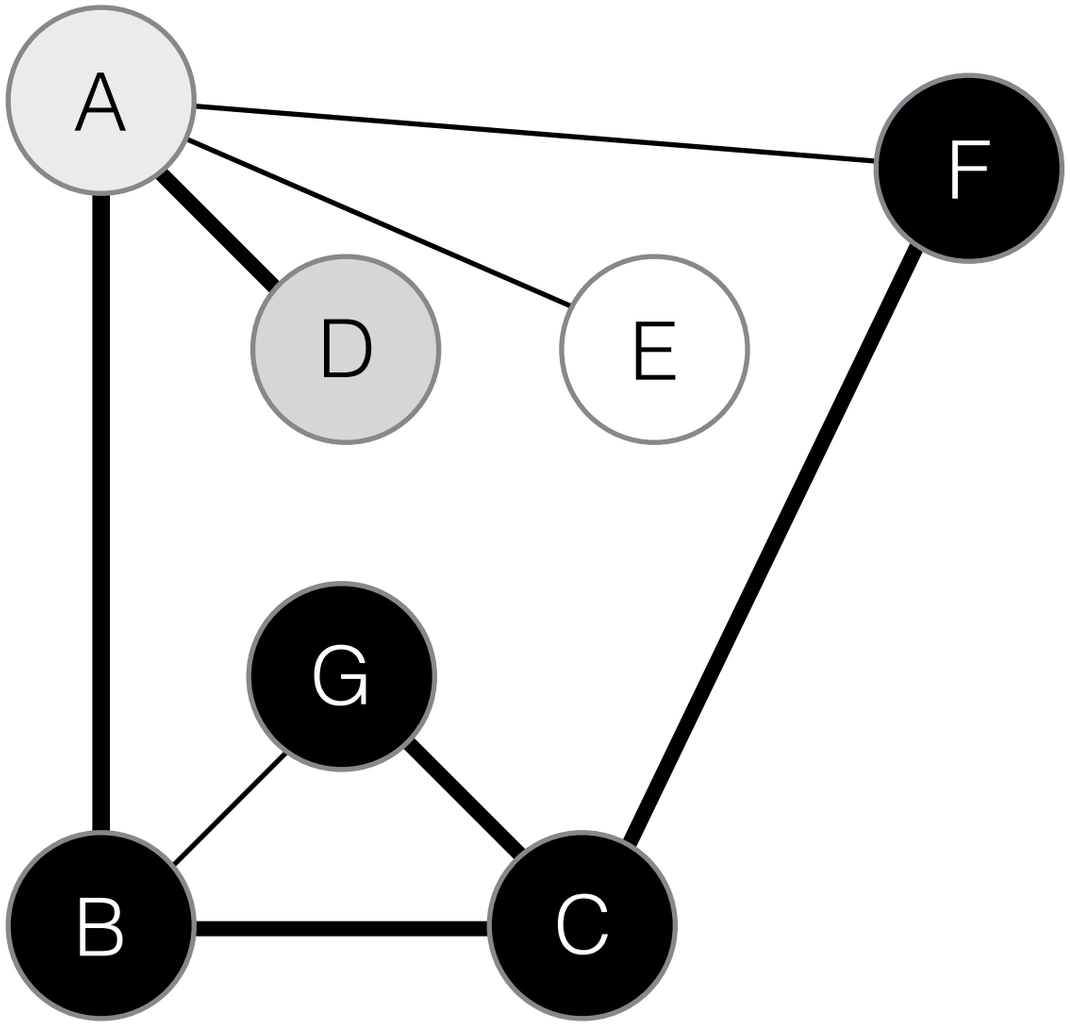

H
I

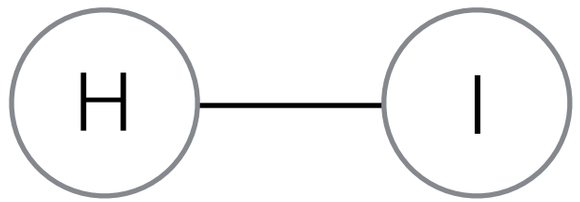

J
K
L
M

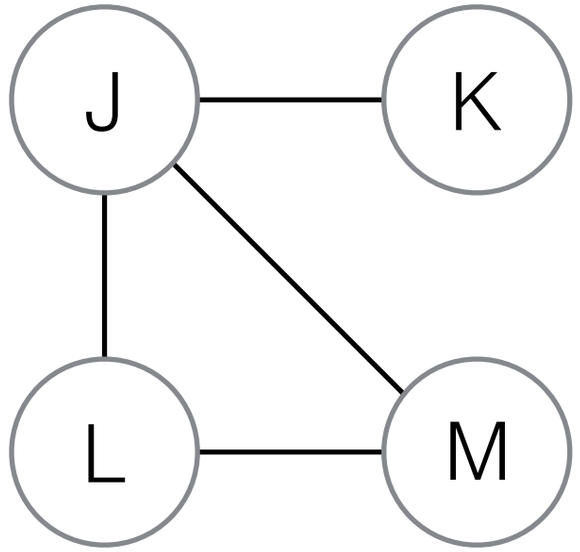

A
F
D
E
G
B
C

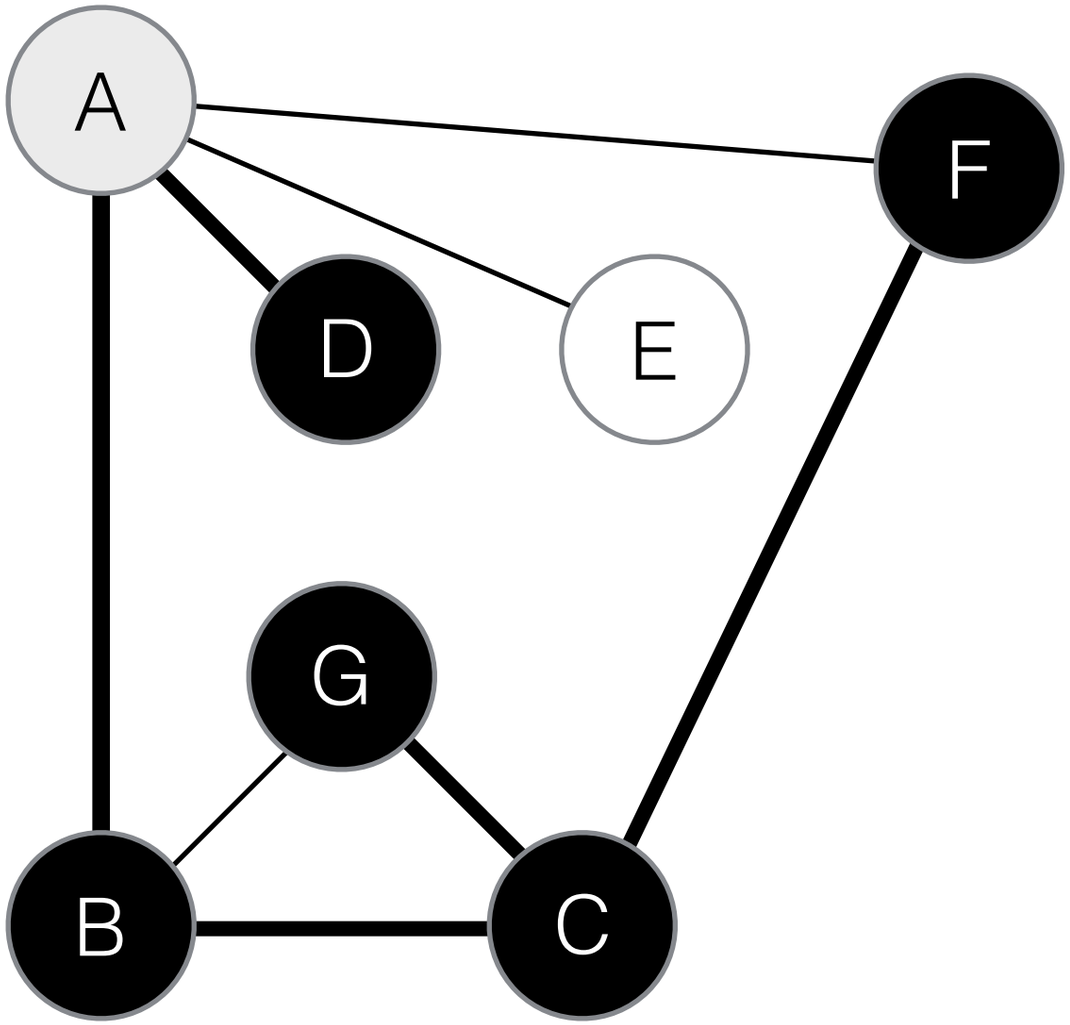

H
I

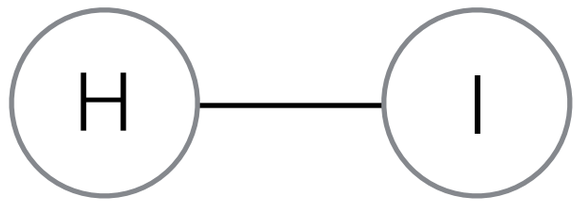

J
K
L
M

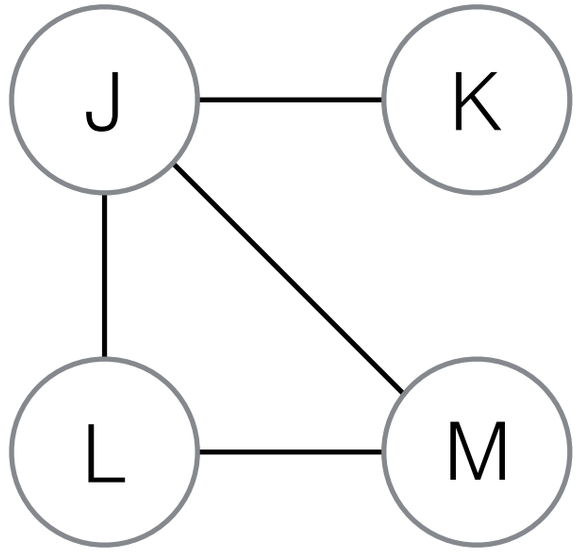

A
F
D
E
G
B
C

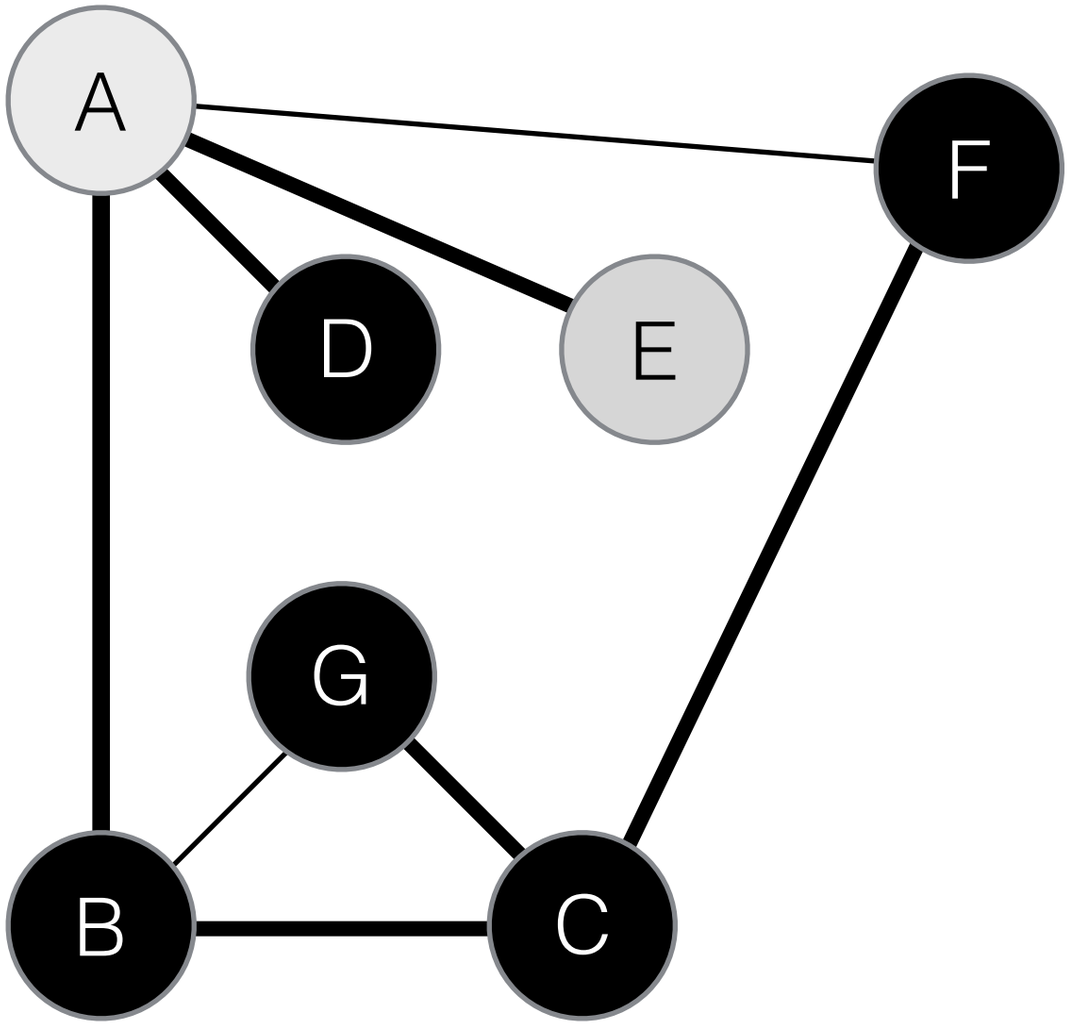

H
I

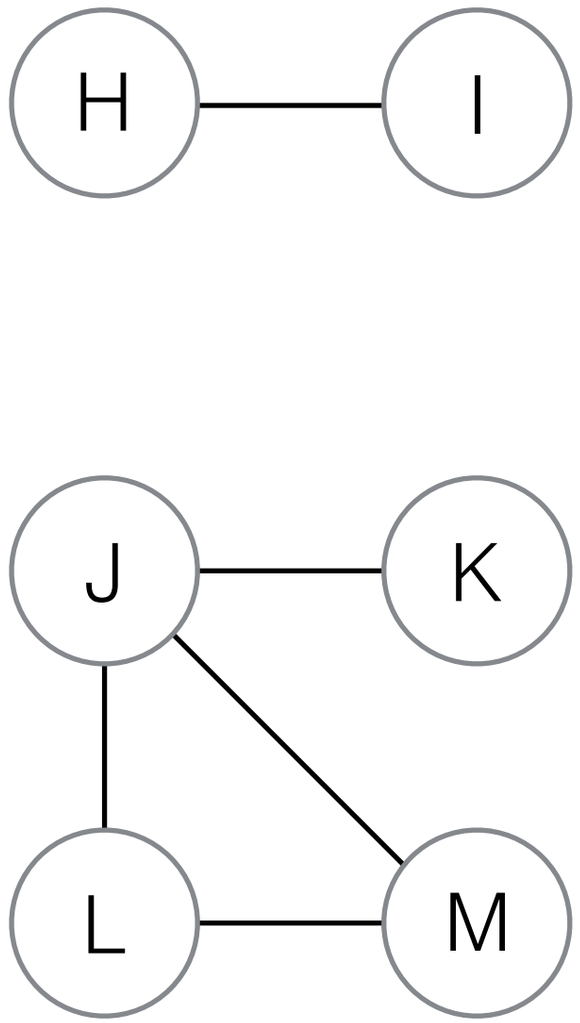

J
K
L
M

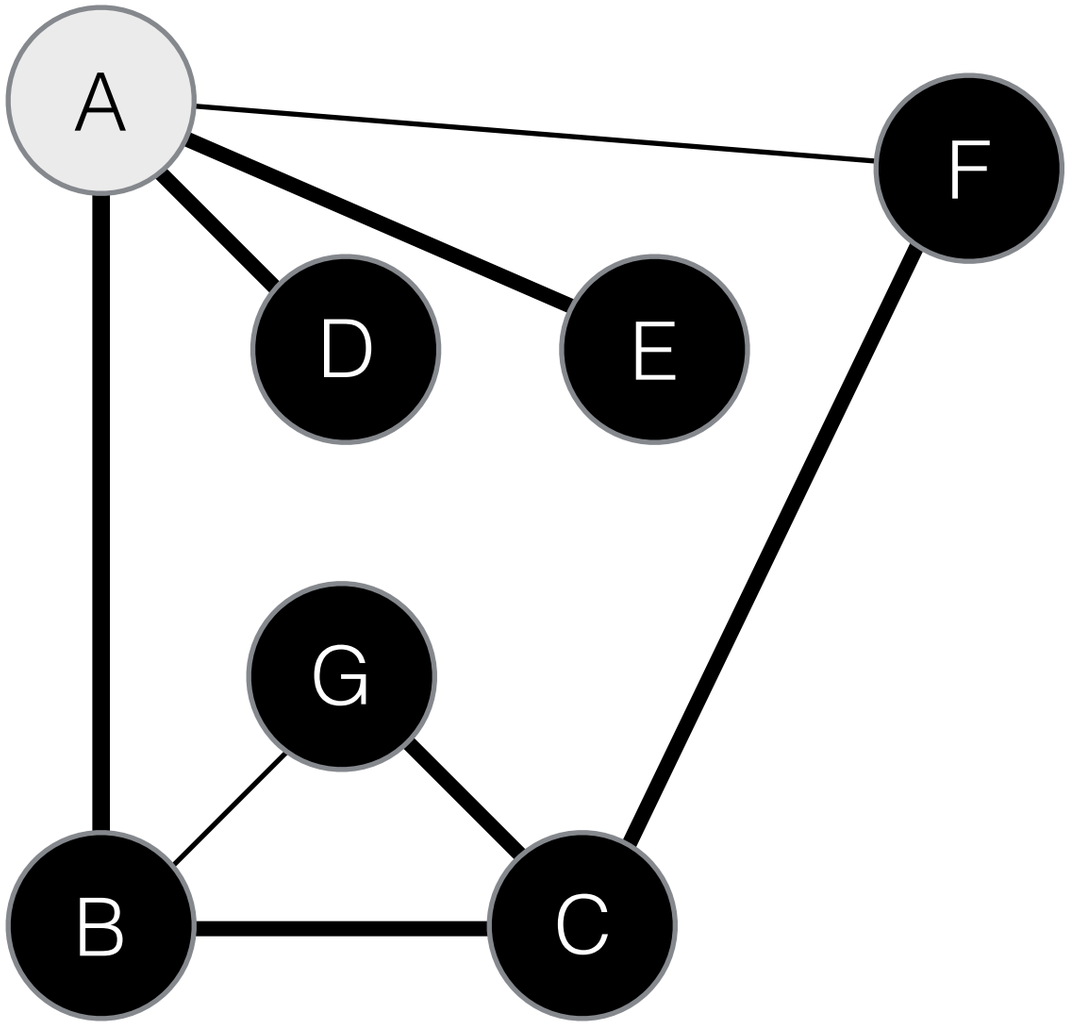

A
F
D
E
G
B
C

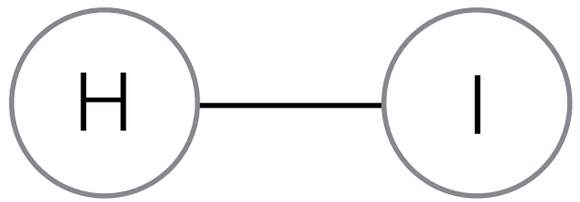

H
I

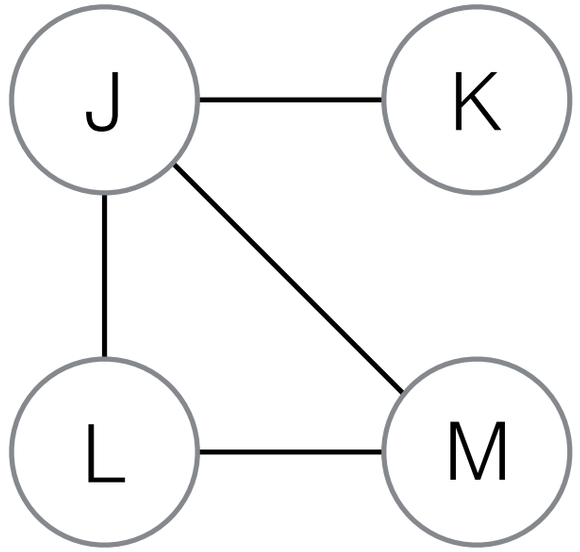

J
K
L
M

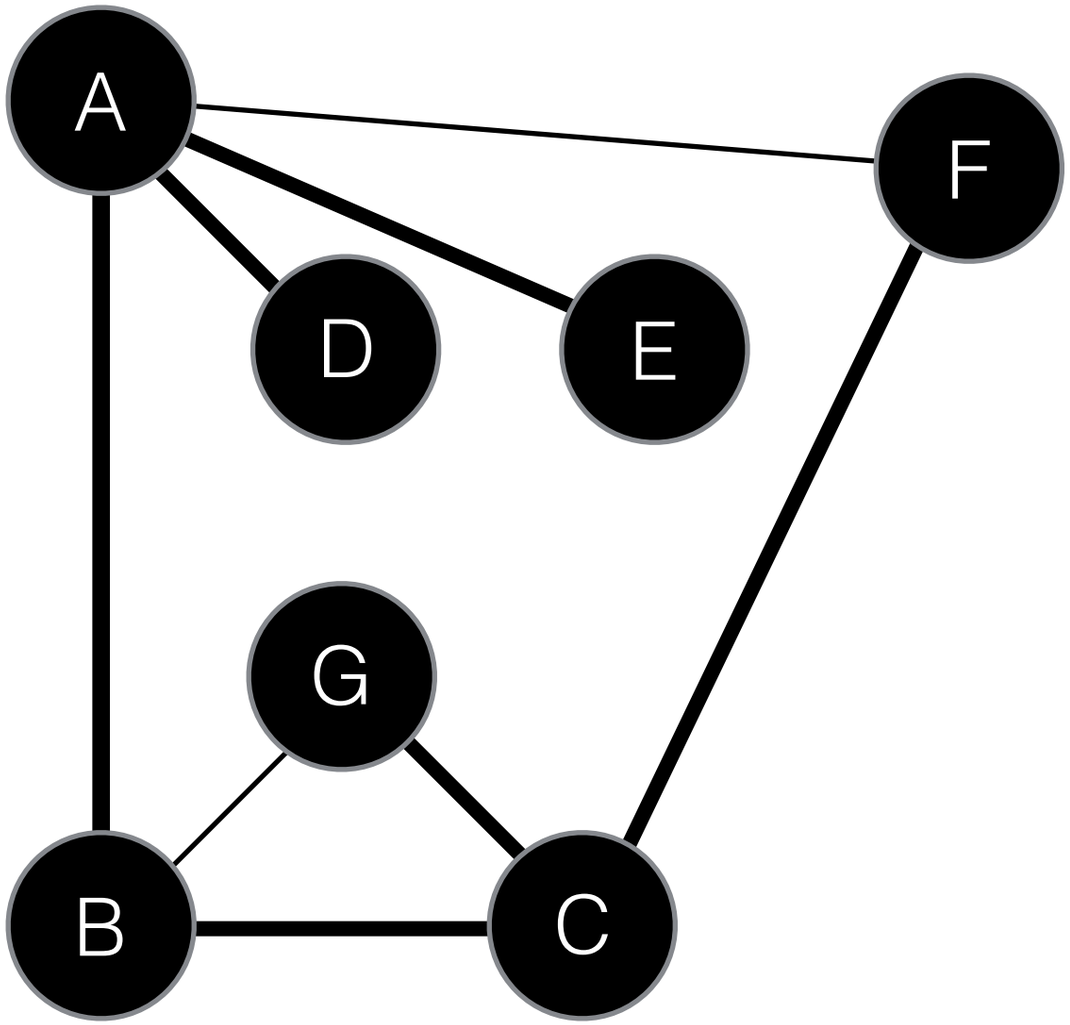

A
F
D
E
G
B
C

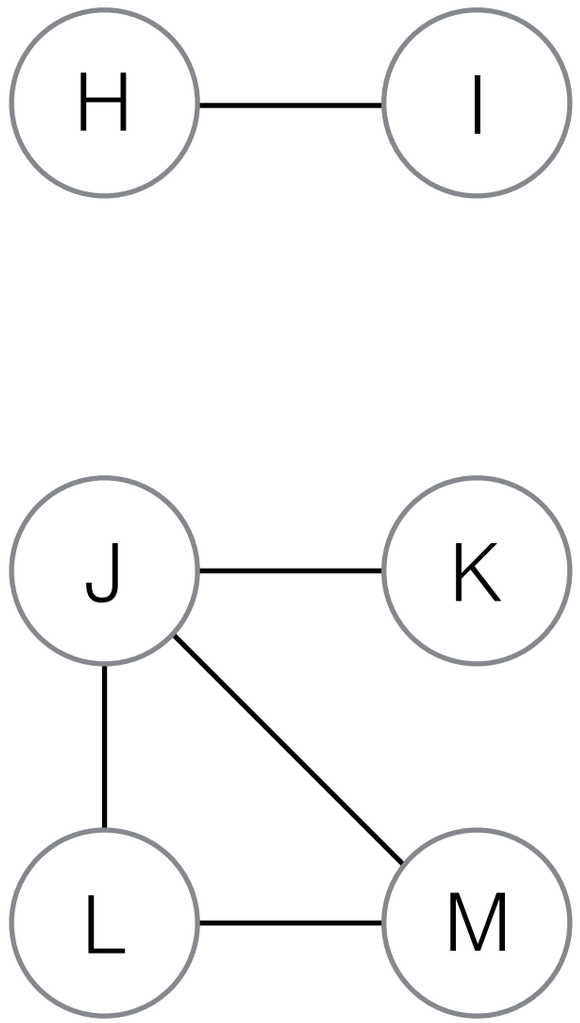

H
I
J
K
L
M

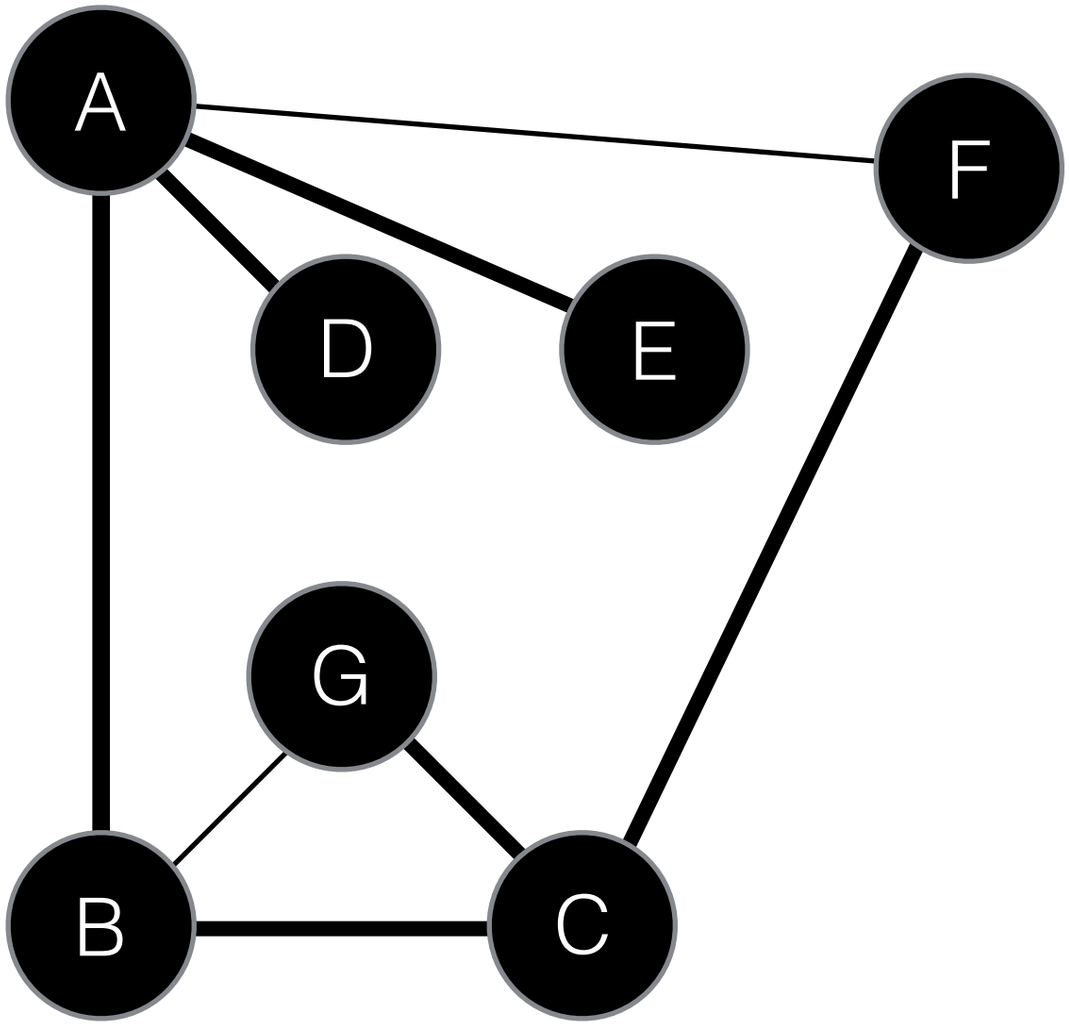

A
F
D
E
G
B
C

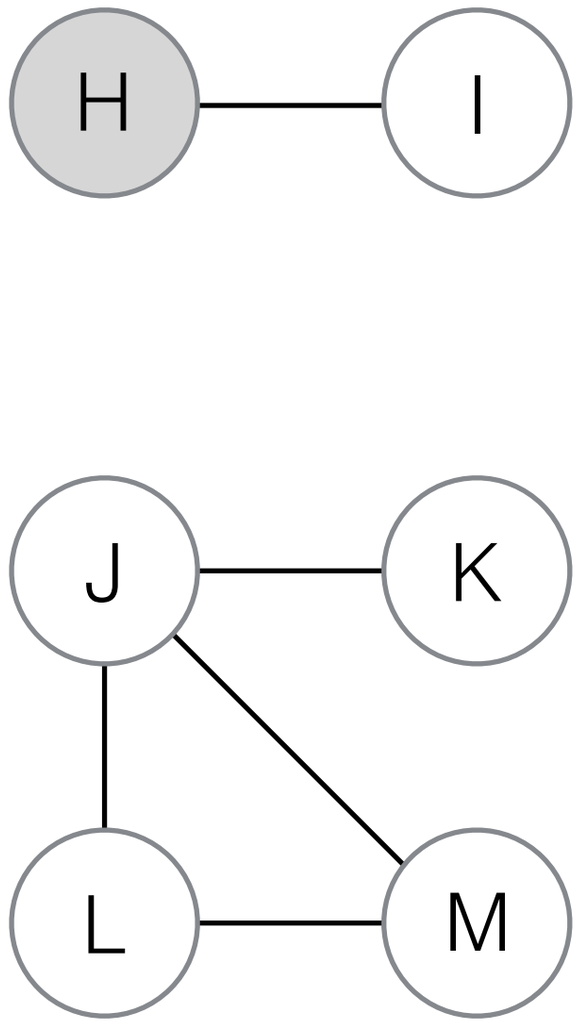

H
I

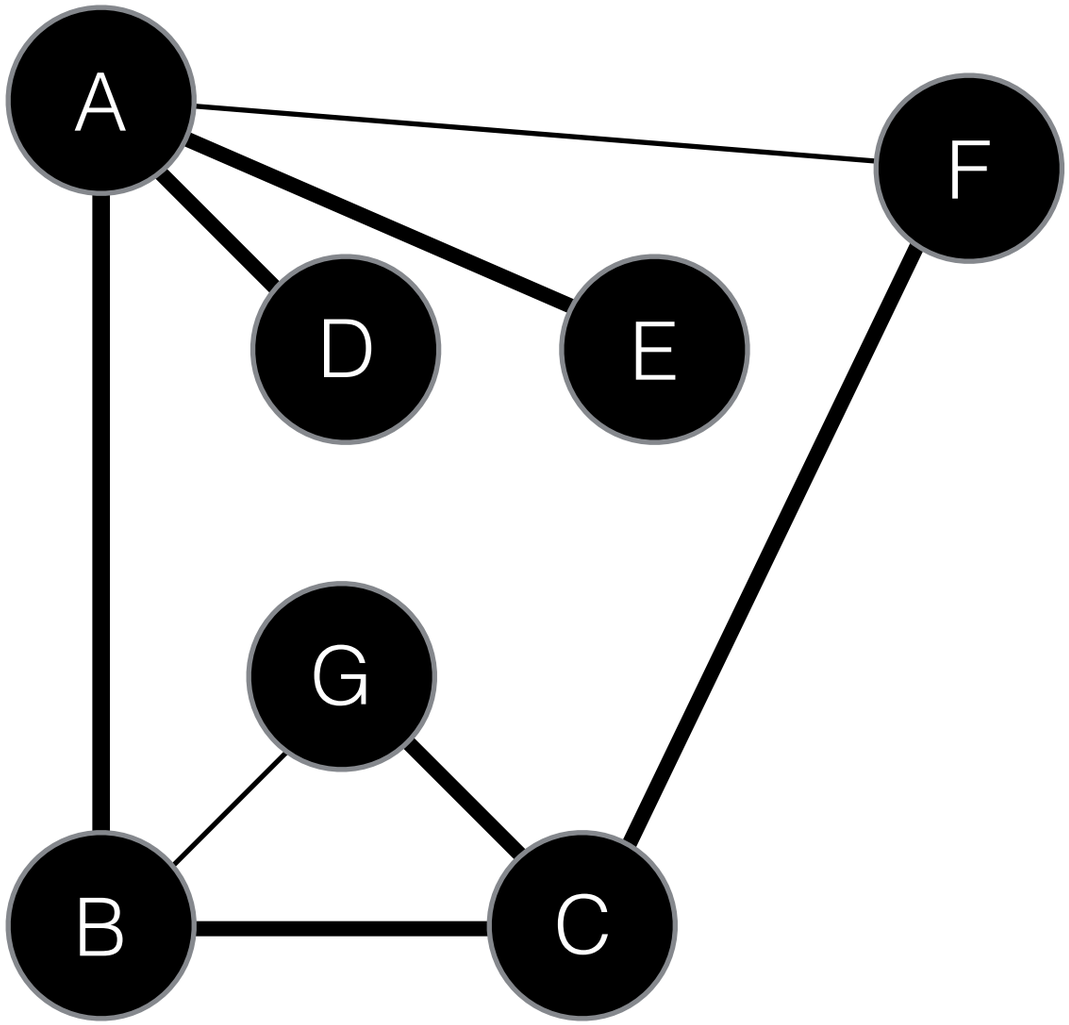

J
K
L
M

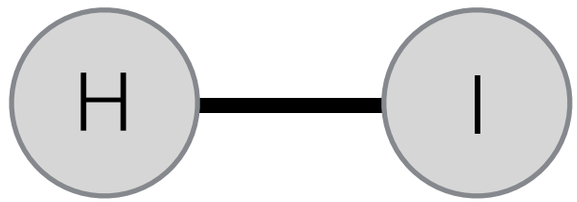

A
F
D
E
G
B
C

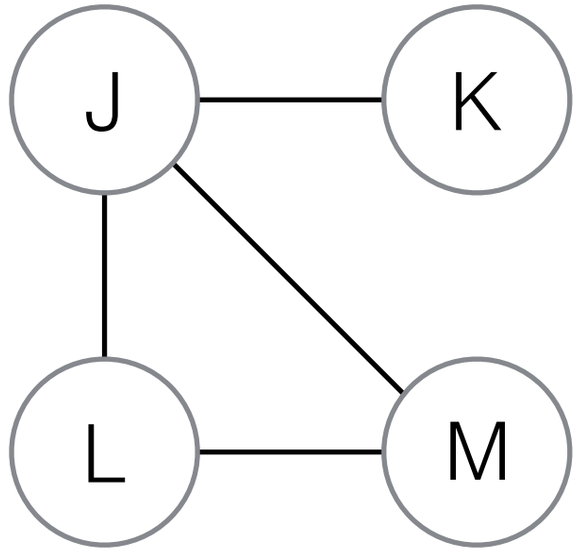

H
I
J
K
L
M

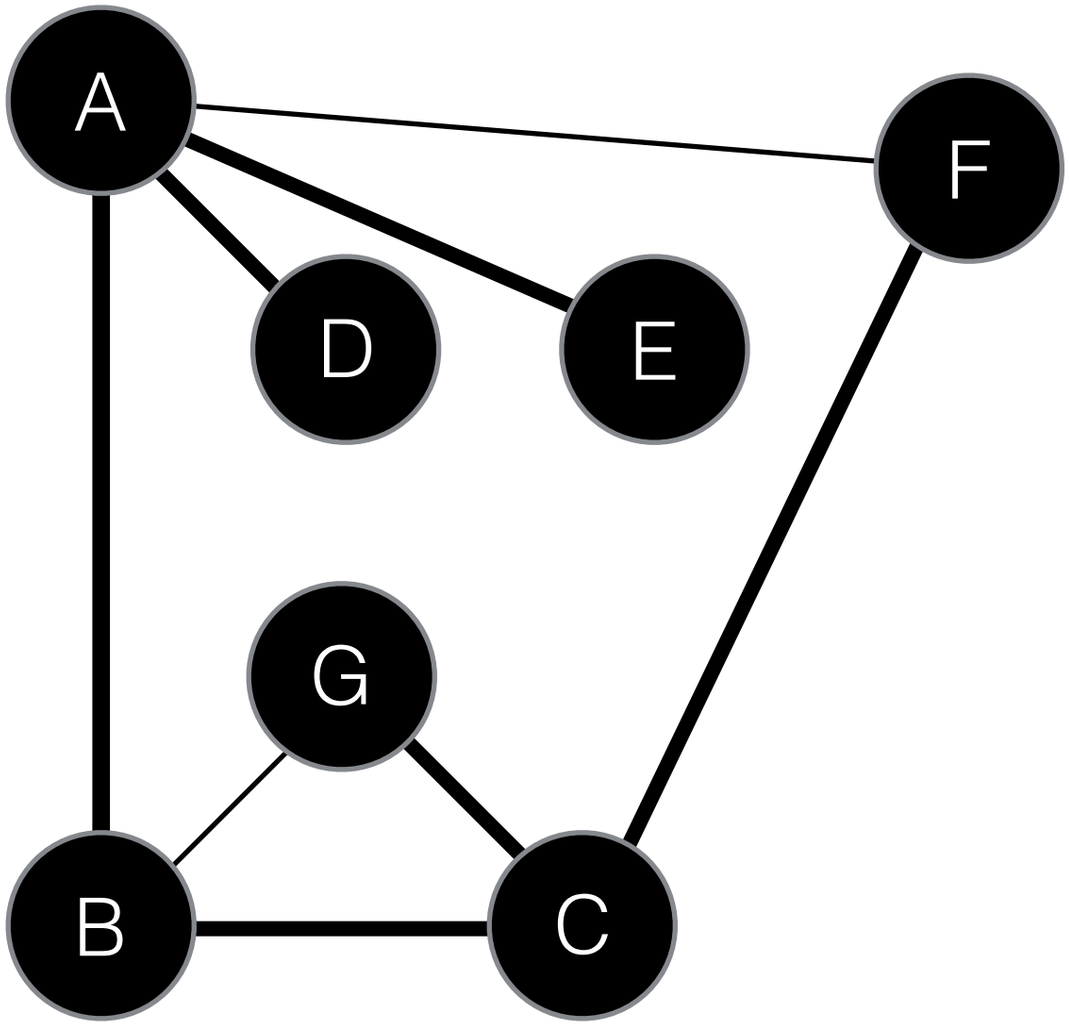

A
F
D
E
G
B
C

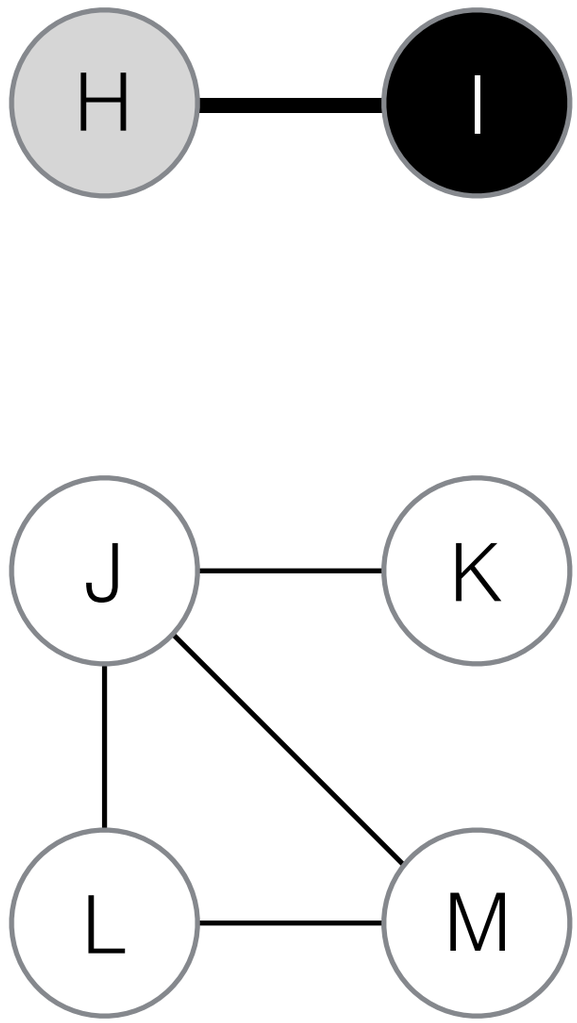

H
I
J
K
L
M

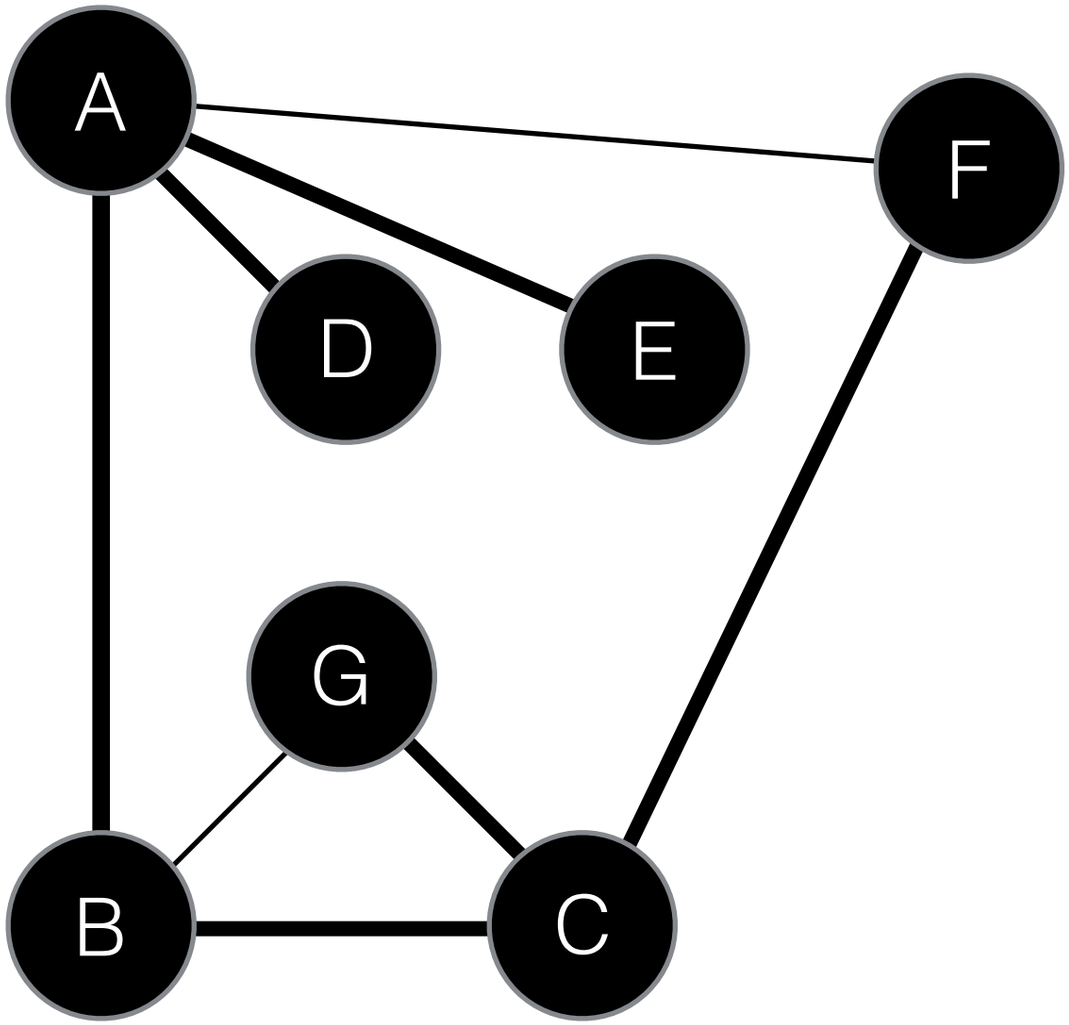

A
F
D
E
G
B
C

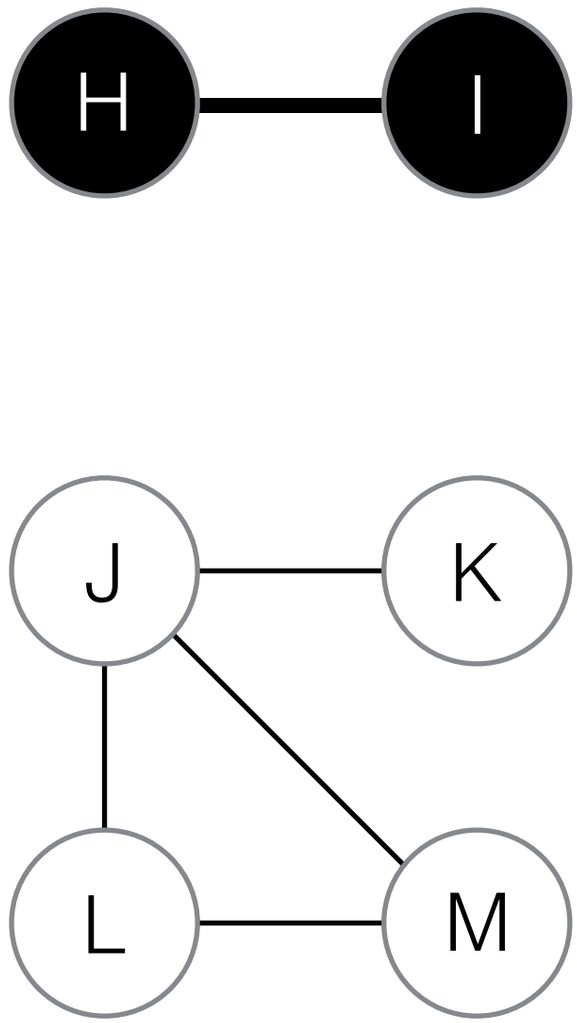

H
I

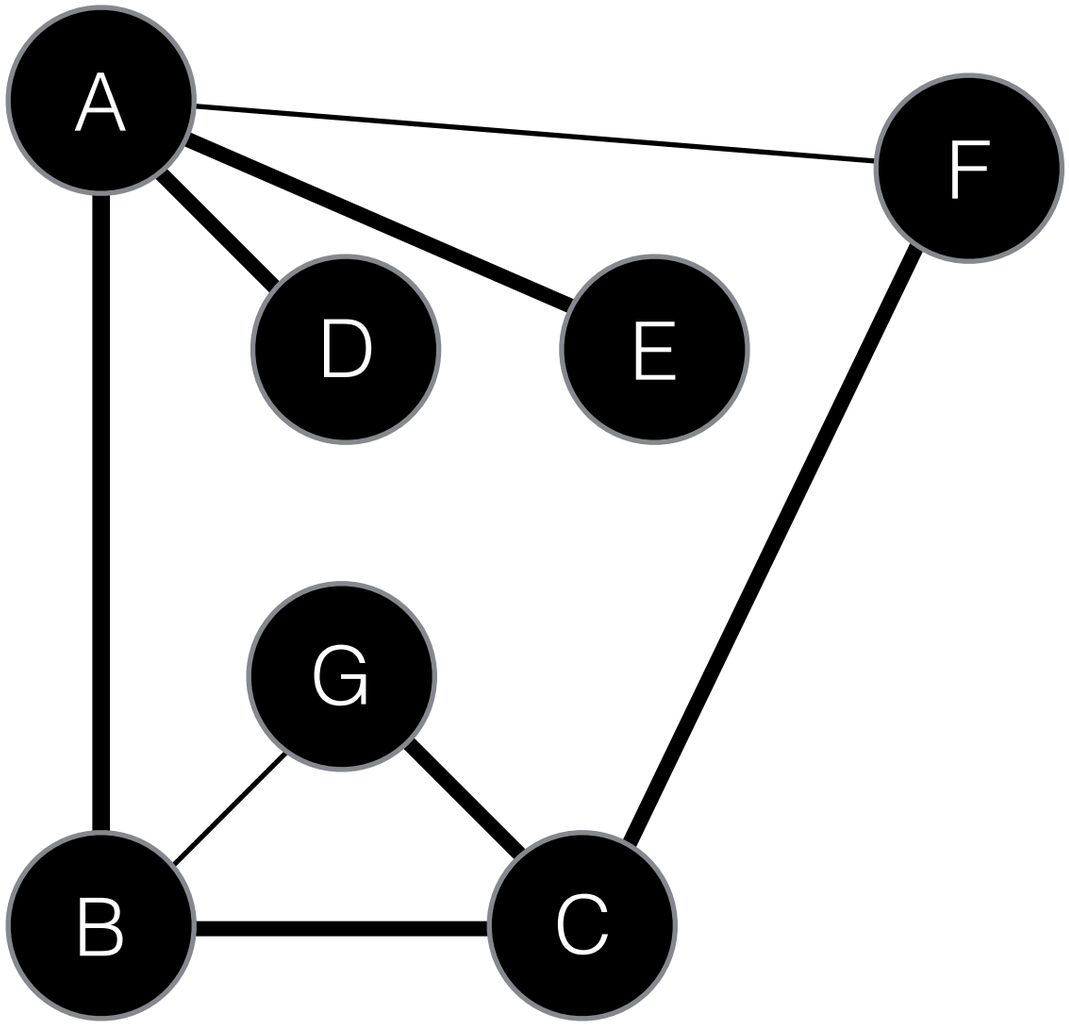

J
K
L
M

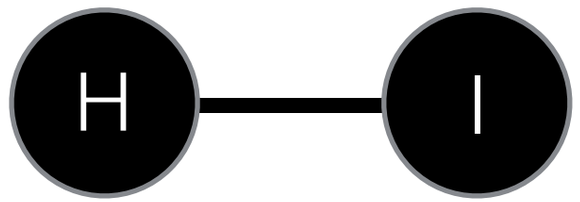

A
F
D
E
G
B
C

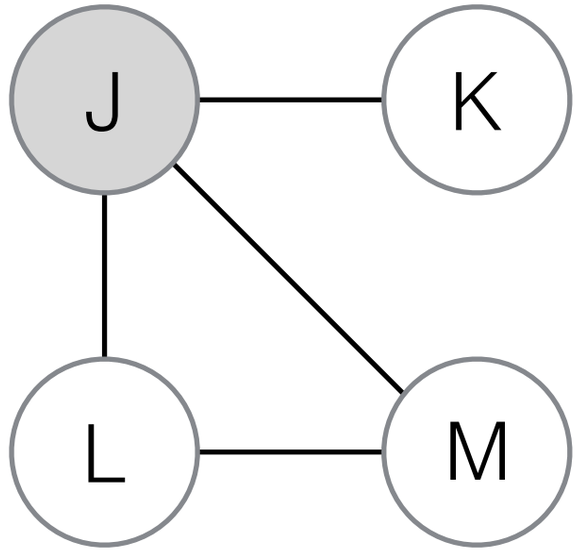

H
I
J
K
L
M

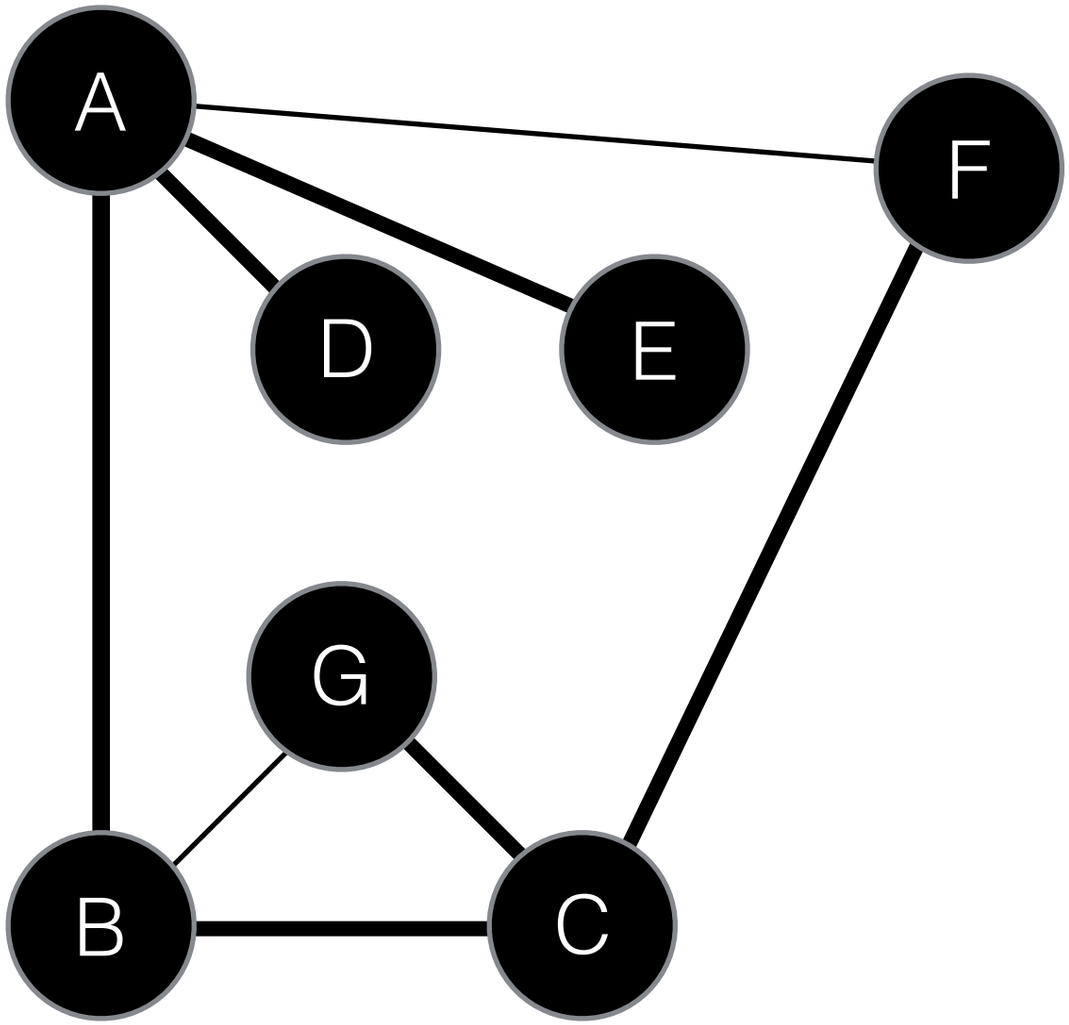

A
F
D
E
G
B
C

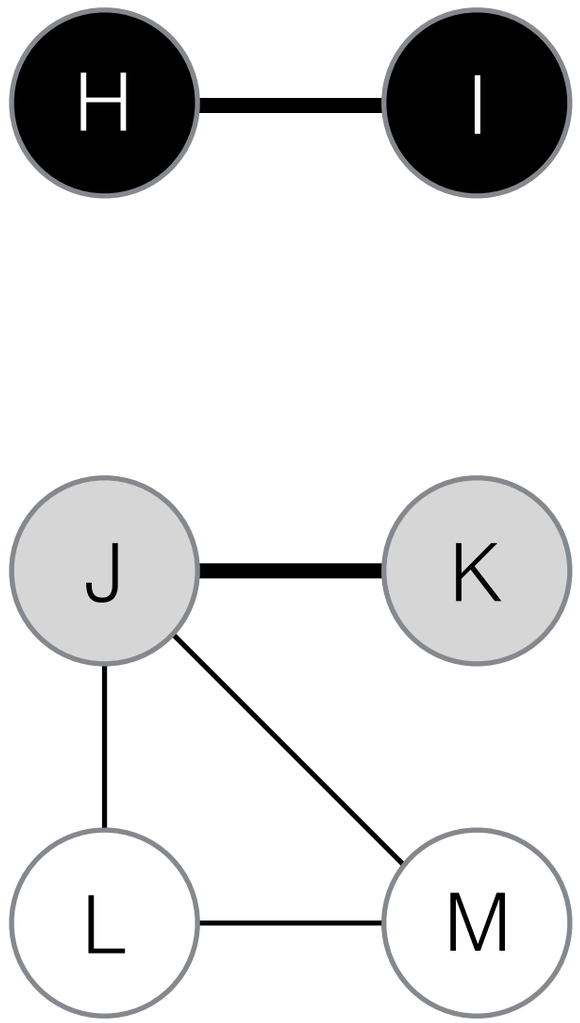

H
I
J
K
L
M

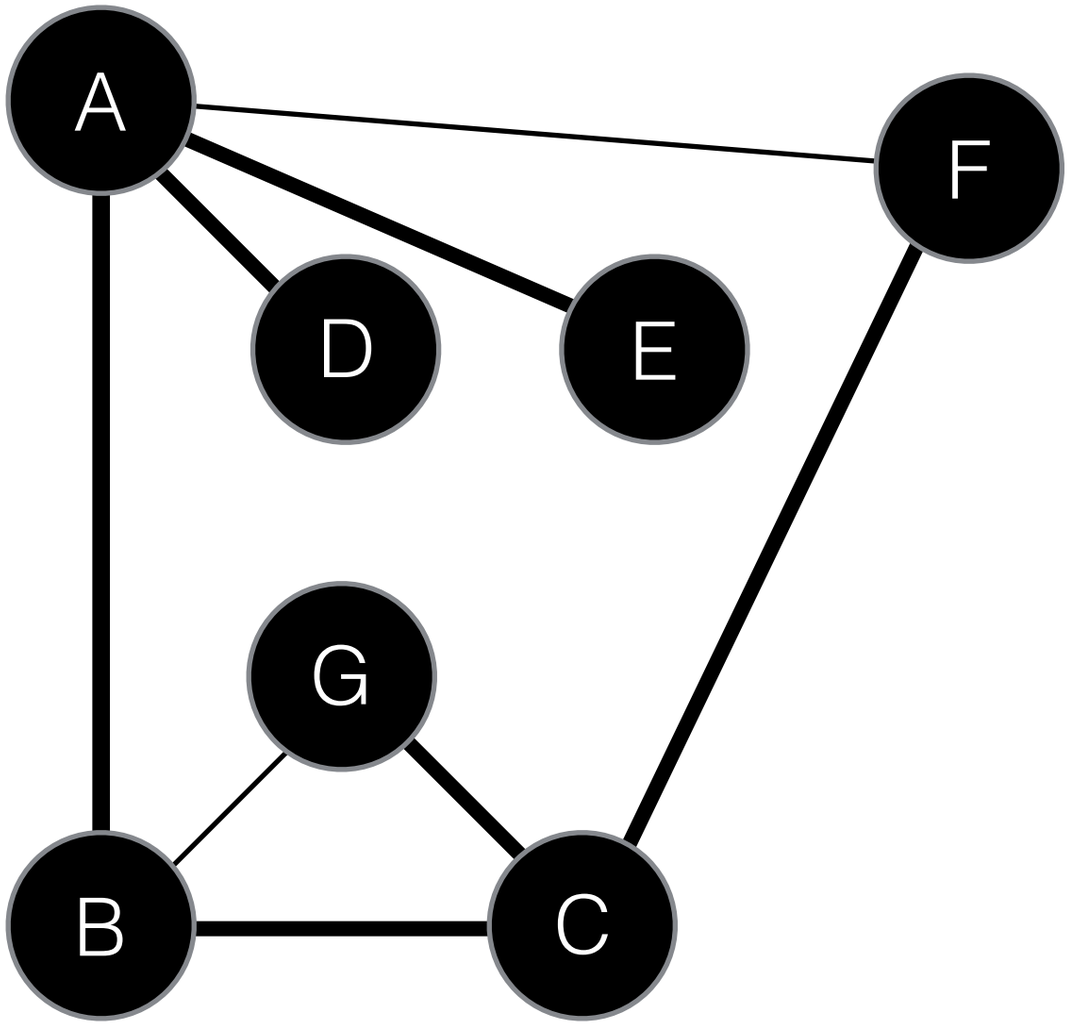

A
F
D
E
G
B
C

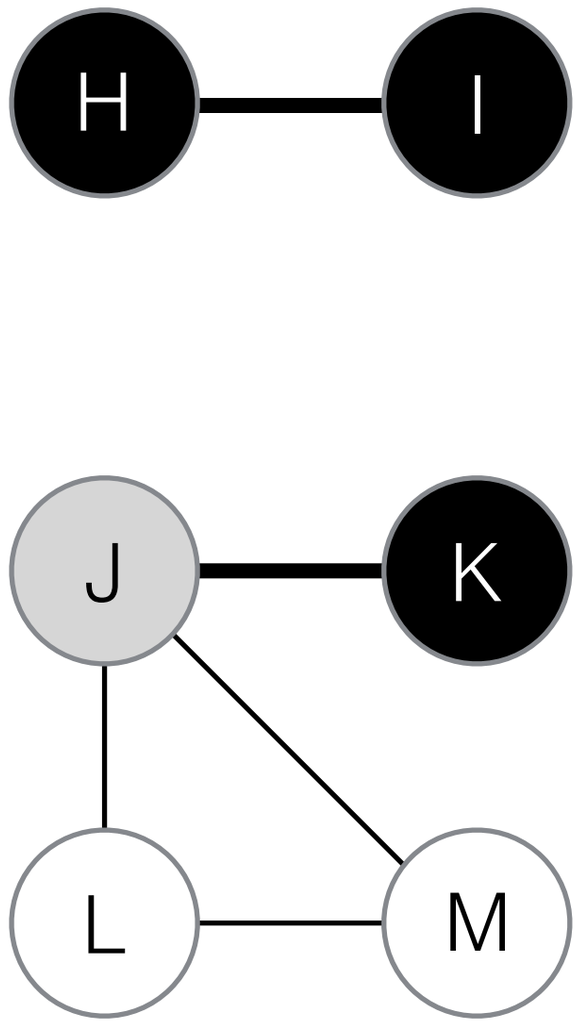

H
I

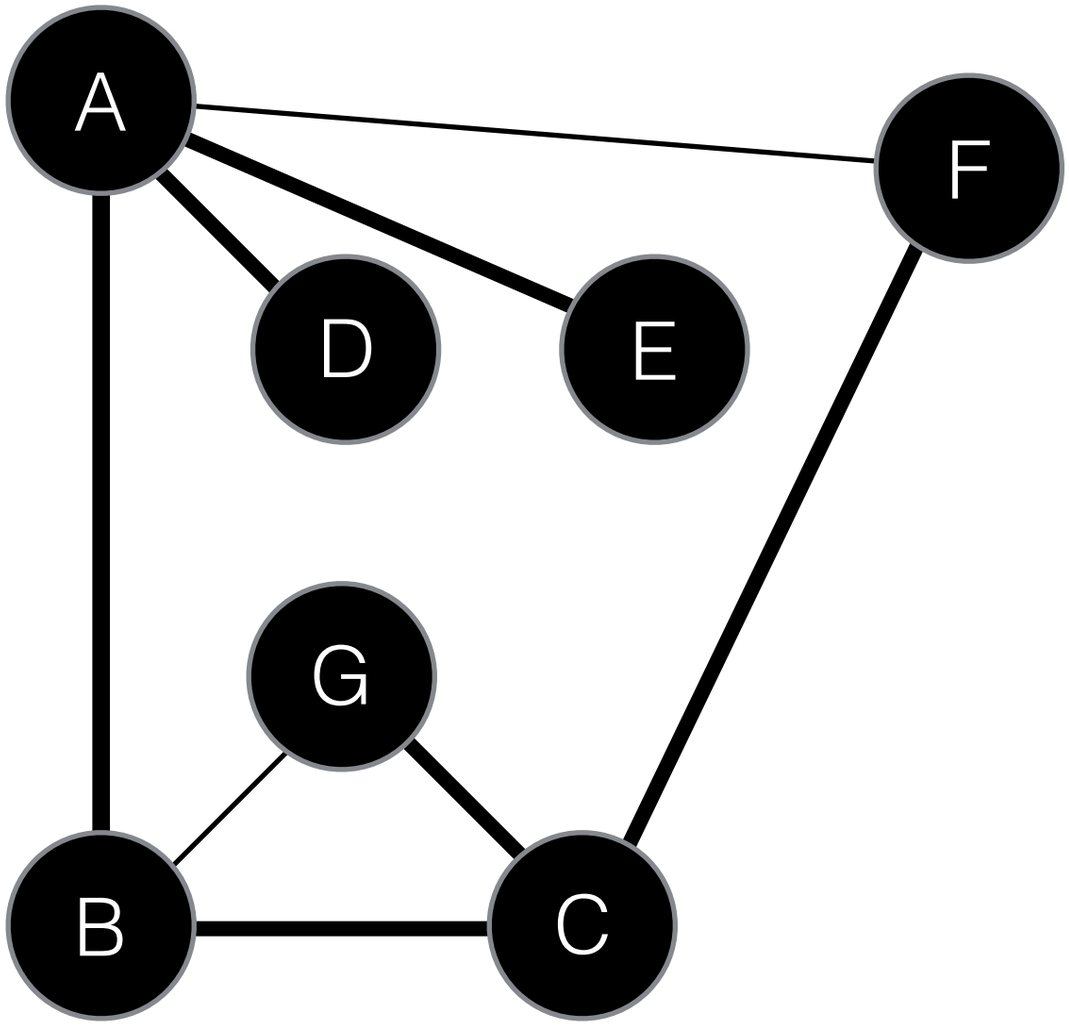

J
K
L
M

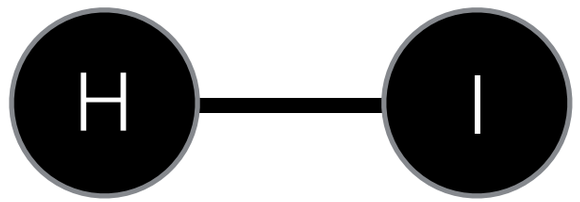

A
F
D
E
G
B
C

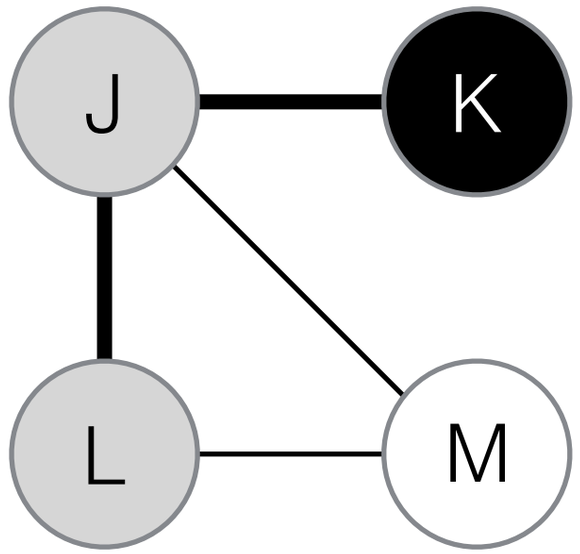

H
I
J
K
L
M

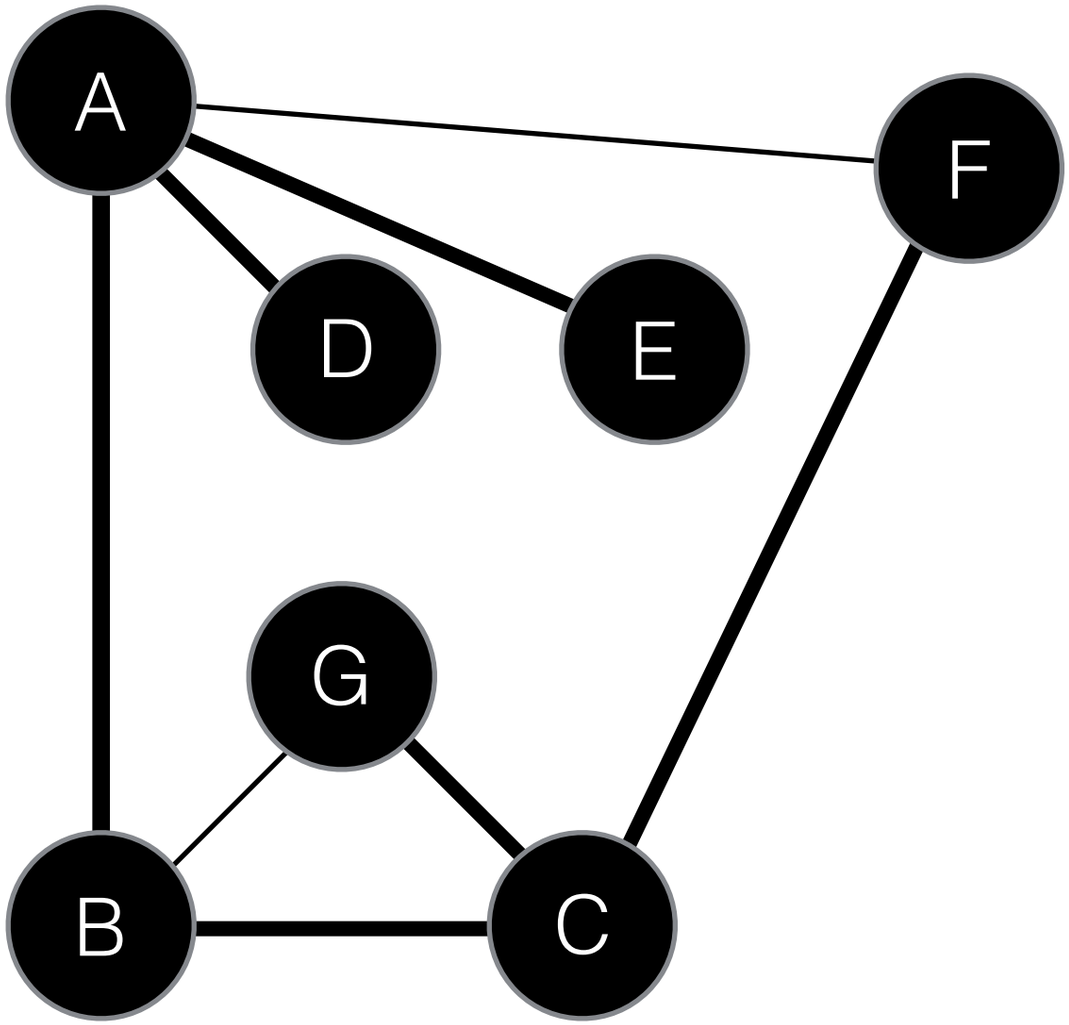

A
F
D
E
G
B
C

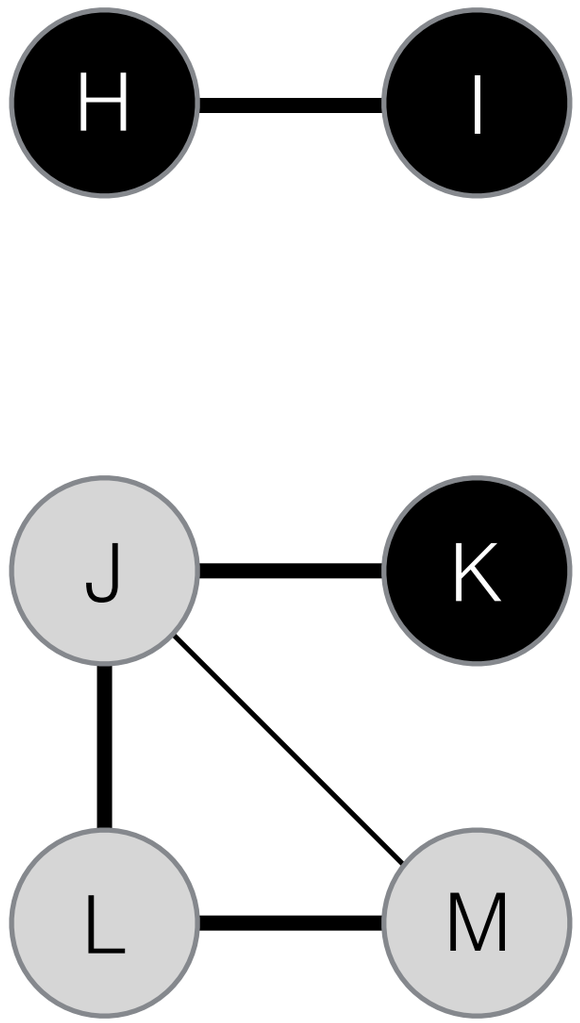

H
I
J
K
L
M

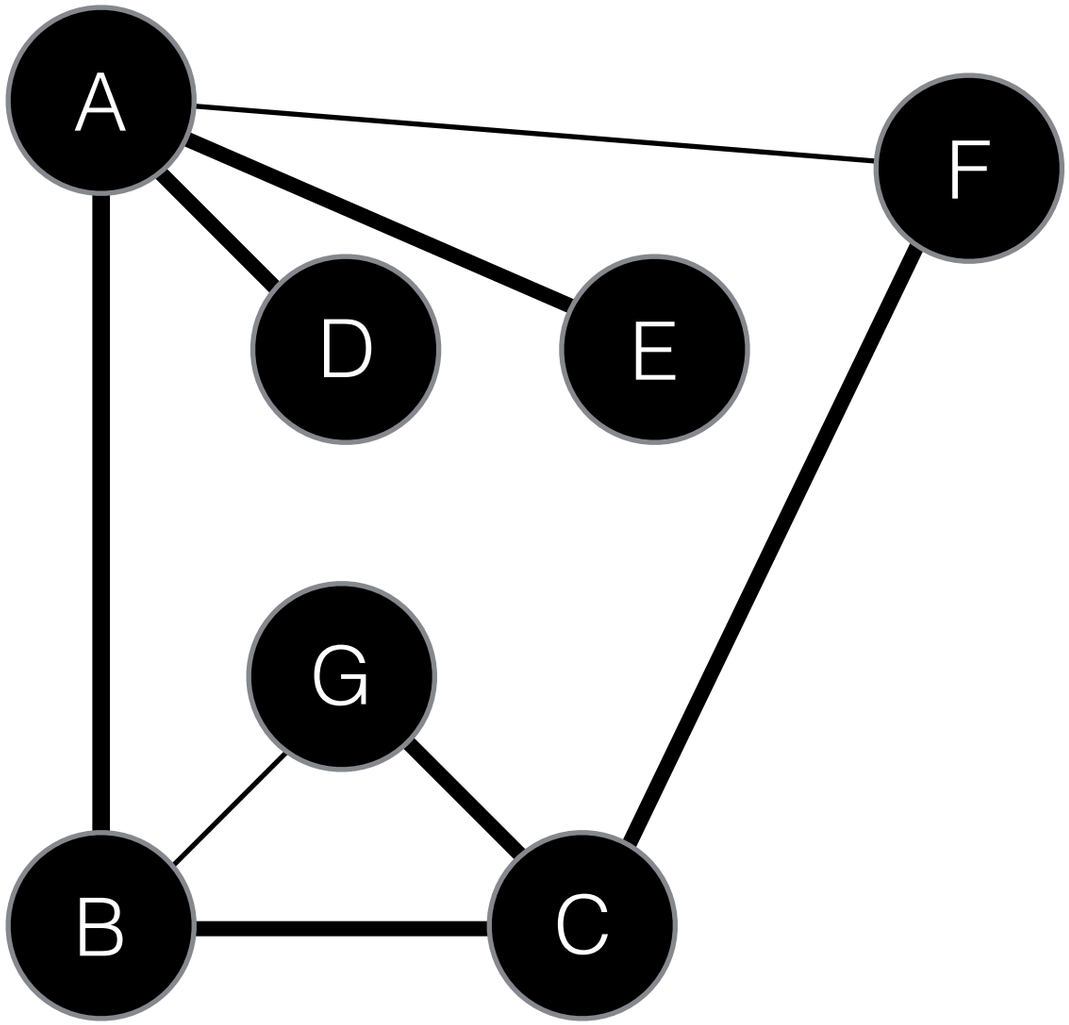

A
F
D
E
G
B
C

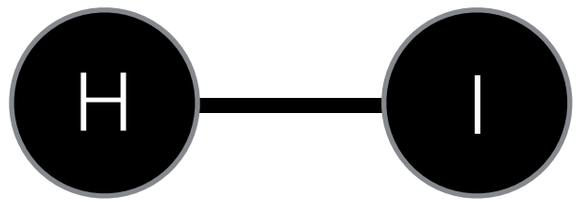

H
I

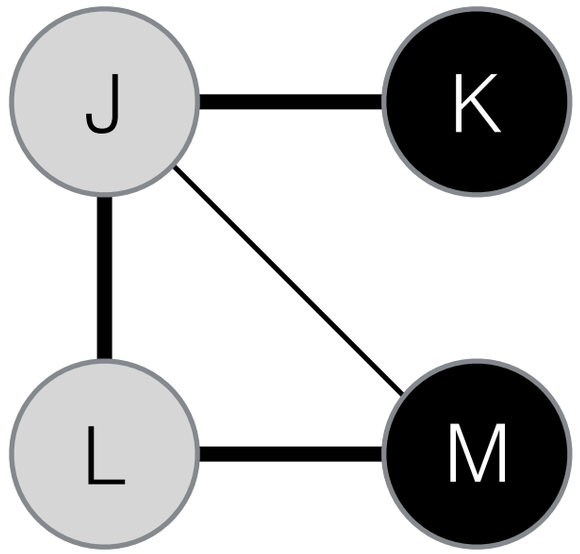

J
K
L
M

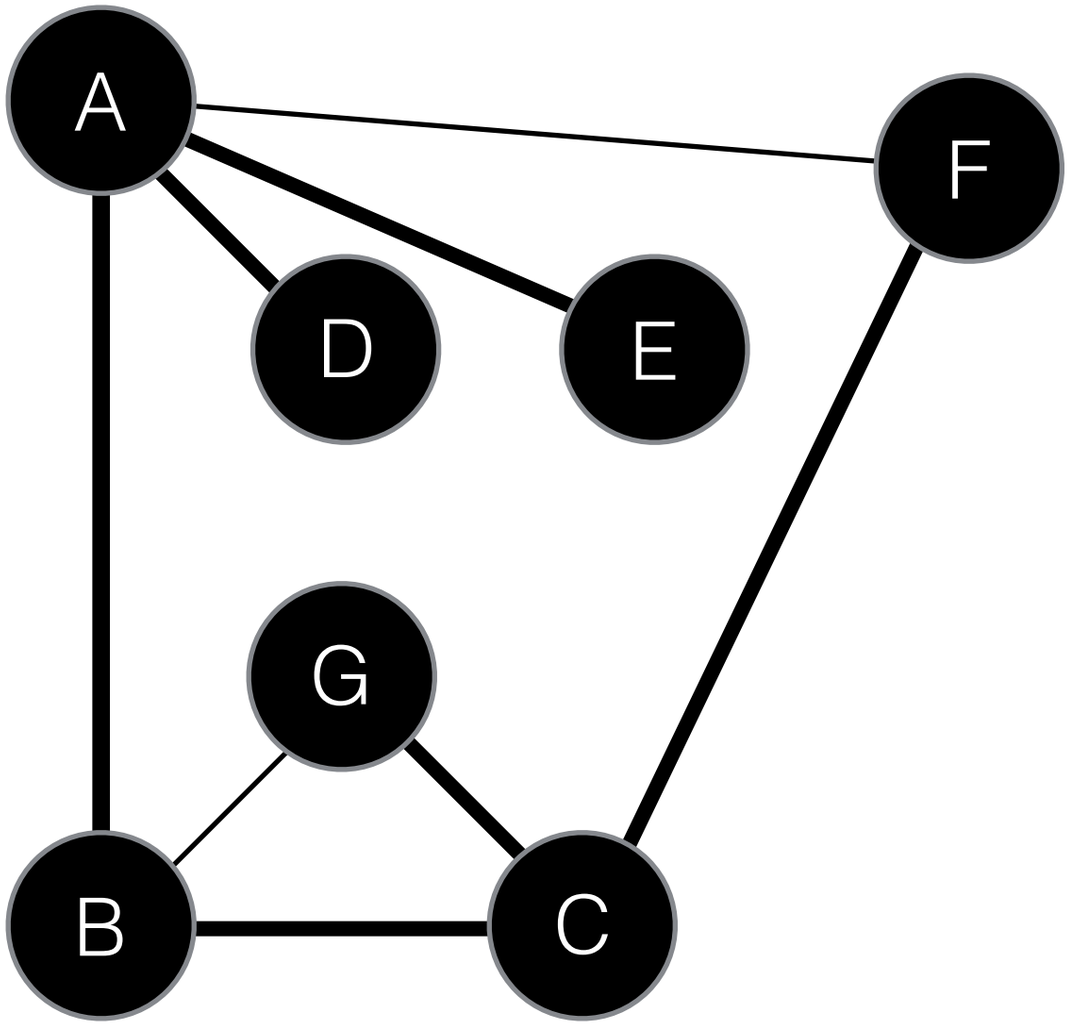

A
F
D
E
G
B
C

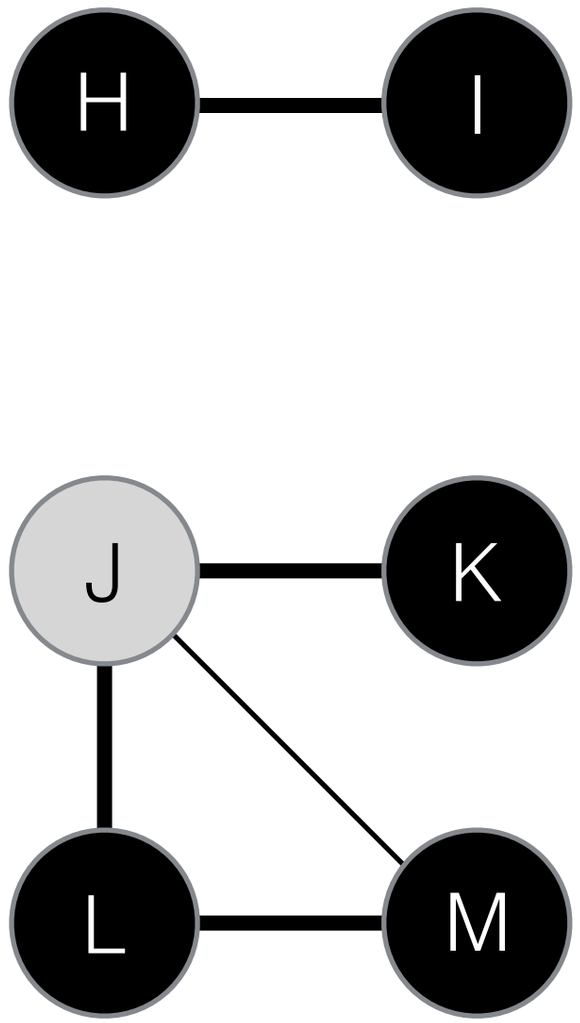

H
I
J
K
L
M

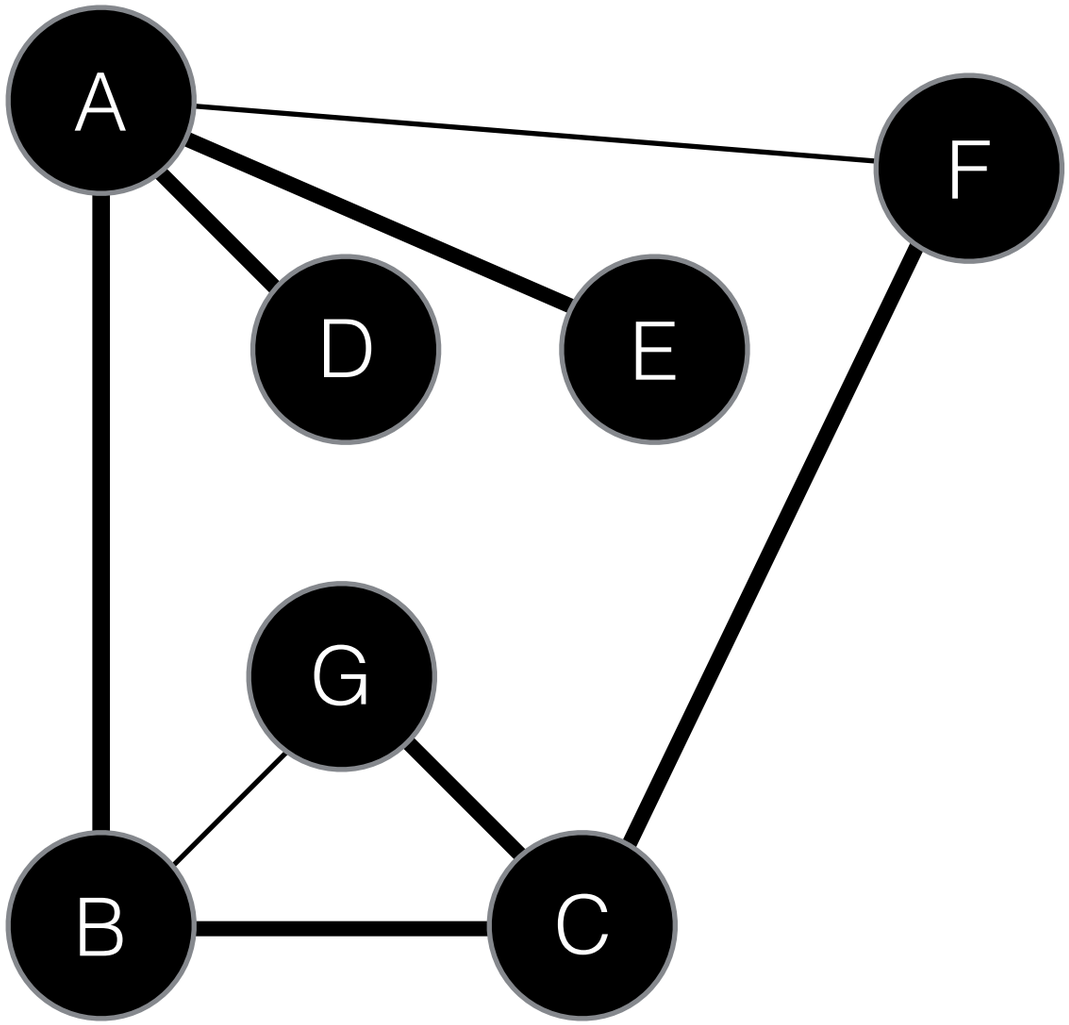

A
F
D
E
G
B
C

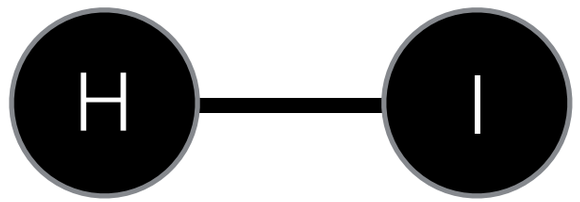

H
I

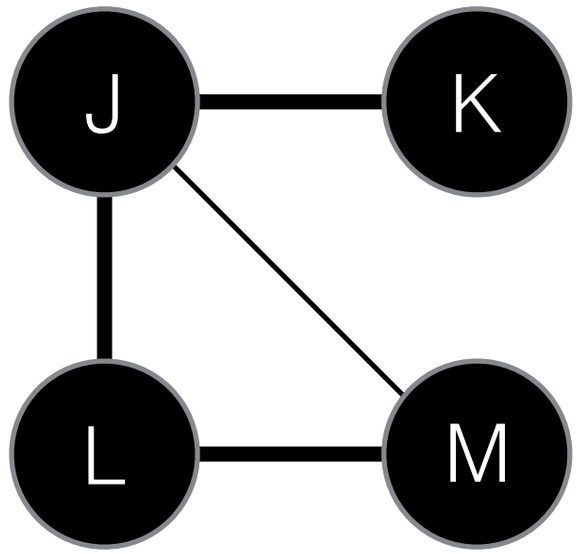

J
K
L
M


A
F
D
E
G
B
C


H
I
J
K
L
M


A
F
D
E
G
B
C


H
I


J
K
L
M