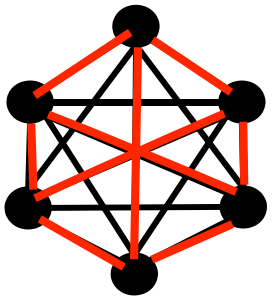
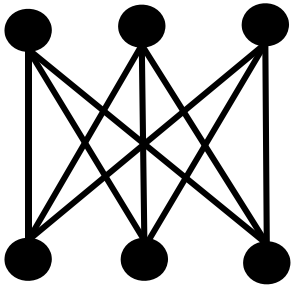
Quiz 3

K_6 

$K_{3,3}$ 

1. Write down the formulas of average degree and density of graph G=(V,E) (|V|=n, |E|=m).
2. Make a program of computing average degree, density, and L_3 of K_6 and $K_{3,3}$. Show the code and its results.
3. Is K_6 planar? Why?
4. Is $K_{3,3}$ planar? Why?

- Submit from Tokyo Tech OCW-i
- Deadline: ??:??(Japan Standard Time) on Dec. 9(Sun)

```python
import networkx as nx
import matplotlib.pyplot as plt
import numpy as np
G1 = nx.complete_graph(6) # K6
G2 = nx.Graph() # K3,3
G2.add_nodes_from(range(0,5))
G2.add_edges_from([(0,3),(0,4),(0,5),(1,3),(1,4),(1,5),(2,3),(2,4),(2,5)])
n1 = nx.number_of_nodes(G1)
m1 = nx.number_of_edges(G1)
n2 = nx.number_of_nodes(G2)
m2 = nx.number_of_edges(G2)

plt.subplot(121)
nx.draw_circular(G1, node_size=400, node_color='red', with_labels=True, font_weight='bold')
plt.subplot(122)
nx.draw_circular(G2, node_size=400, node_color='red', with_labels=True, font_weight='bold')
```