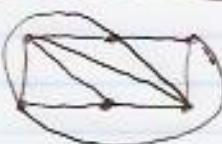


9-3 Homework Solutions

1) [BB]

2) a)



b)



3) a) [BB]

b)

$\begin{matrix} \bullet & \bullet \\ \bullet & \bullet \end{matrix}$
0,0,0,0

$\begin{matrix} \bullet & \bullet \\ \bullet & \bullet \end{matrix}$
1,1,0,0

$\begin{matrix} \bullet & \bullet \\ \bullet & \bullet \end{matrix}$
1,1,1,1

$\begin{matrix} \bullet & \bullet \\ \bullet & \bullet \end{matrix}$
2,1,1,0

$\begin{matrix} \bullet & \bullet \\ \bullet & \bullet \end{matrix}$
2,2,1,1

$\begin{matrix} \bullet & \bullet \\ \bullet & \bullet \end{matrix}$
2,2,2,0

$\begin{matrix} \bullet & \bullet \\ \bullet & \bullet \end{matrix}$
3,1,1,1

$\begin{matrix} \times & \times \\ \times & \times \end{matrix}$
3,2,2,1

$\begin{matrix} \square & \square \\ \square & \square \end{matrix}$
2,2,2,2

$\begin{matrix} \square & \square \\ \square & \square \end{matrix}$
3,3,2,2

$\begin{matrix} \times & \times \\ \times & \times \end{matrix}$
3,3,3,3

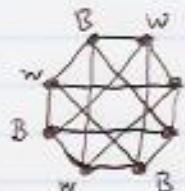
4) a) No, the right graph has a degree 4 vertex, left one doesn't. b) [BB]

c) No. The degree 3 vertex on the left is connected to two vertices of degree 1 while the degree 3 vertex on the right is connected to one vertex of degree 1.

d) Yes. $A \mapsto r, B \mapsto w, C \mapsto p, D \mapsto g, E \mapsto s, F \mapsto v, G \mapsto t, H \mapsto u$ is one possibility.

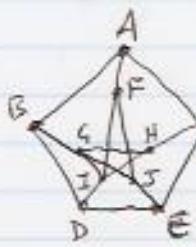
5) a) [BB]

b) Yes

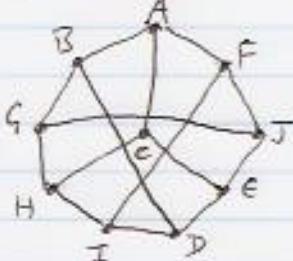


every black vertex is connected to every white vertex and no other edges exist.

6) Yes



&



for example

10) The graph on the left only has ~~one~~ two cycles of length 4, the one on the right has ~~two~~ three