

MATH 425

Homework # 1

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|--------|---|----------|
| 1) 1.1 | } | Textbook |
| 2) 1.3 | | |
| 3) 1.5 | | |
| 4) 1.8 | | |
- | | | |
|---------|---|----------|
| 2') 1.4 | } | Textbook |
| 4') 1.7 | | |

(5) Prove that a graph is not bipartite if it has more than $\frac{n^2}{4}$ edges?

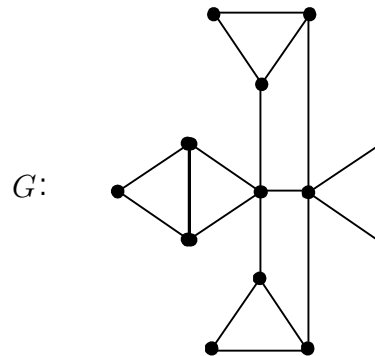
(6) Consider the two graphs of G_1 and G_2 :



Draw the graph of each of the following

- (a) $G_1 \cup G_2$
- (b) $\overline{G_1} + G_2$
- (c) $G_1 \times G_2$

(7) Consider the graph G in the figure:



- (a) Is the graph G bipartite? If yes, give a bipartition. If not, explain why not?
- (b) How many edges does \overline{G} have?
- (c) List all values of n for which K_n is a subgraph of G ?
- (d) Find a subgraph that is not an induced subgraph of G ?
- (e) Find a spanning subgraph having a minimum number of edges?