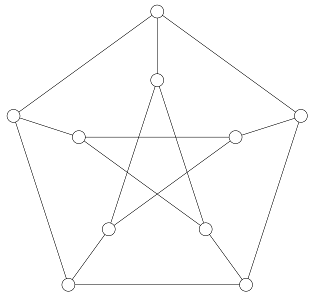
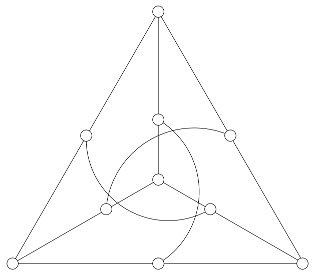
AMAT 3240 – Graph Theory **Assignment #1**
Fall 1999

Instructions

- Answer each question completely.
- This assignment is due at 8:00 am on September 21, 1999.

1. Are the following different graphs, or are they different drawings of the same graph? Justify your answer.





2. Section 8.1, Question 6.
3. Section 8.1, Question 7.
4. Section 8.1, Question 8.
5. Section 8.1, Question 9.
6. For each of the following degree sequences, either construct a graph with the degree sequence or prove that no such graph exists.
   (a) 6,5,5,4,3,2,1,0
   (b) 5,4,3,3,1
   (c) 7,4,3,3,3,2,2,2,1
7. Section 8.2, Question 22.
8. Section 8.2, Question 28.
9. Section 8.2, Question 30.
10. A mouse eats his way through a $3 \times 3 \times 3$ cube of cheese by tunnelling through all 27 of the $1 \times 1 \times 1$ subcubes. If he starts at one corner and always moves on to an uneaten adjacent subcube, can he finish at the centre of the cube?