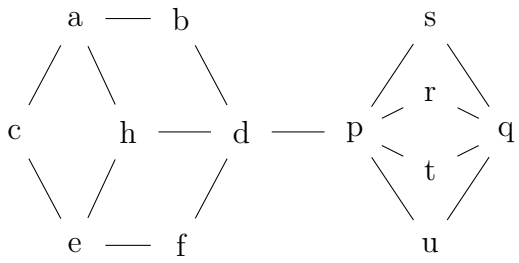
CS 173, Spring 19 Examlet 6, colored

Name:_____

NetID:_____ **Lecture: A B**

Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

1. (10 points) How many isomorphisms are there from G (below) to itself? Justify your answer and/or show your work clearly .



2. (5 points) The wheel graph W_{73} has 73 nodes on the rim. How many edges does it have?

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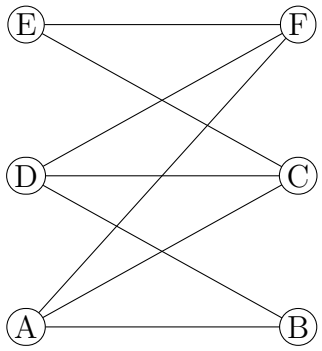
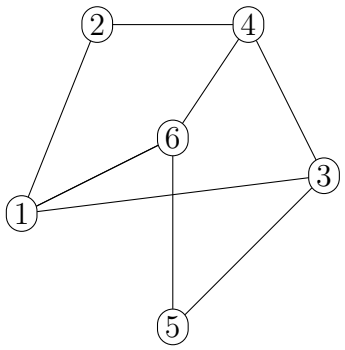
Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

1. (10 points) Are graphs X and Y (below) isomorphic? Justify your answer.

Graph X



Graph Y



2. (5 points) Show four distinct (i.e. not isomorphic) graphs, each of which is connected and has six nodes and no cycles.

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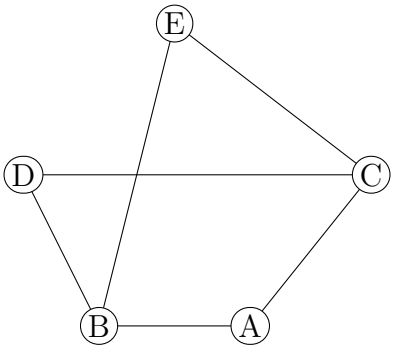
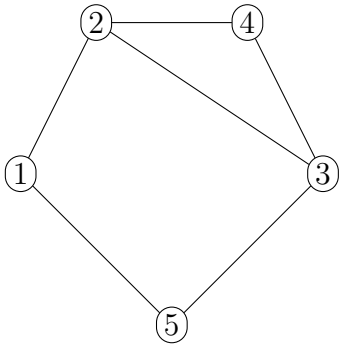
1. (10 points) Are graphs X and Y (below) isomorphic? Justify your answer.

Graph X



Graph Y



2. (5 points) Is the cycle graph C_4 a subgraph of graph $K_{3,3}$? Briefly justify your answer.

Name:_____

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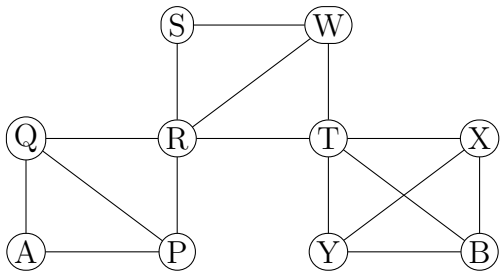
Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

1. (10 points) How many isomorphisms are there from G (below) to itself? Justify your answer and/or show your work clearly .



2. (5 points) What is the difference between a path and an open walk?

Name:_____

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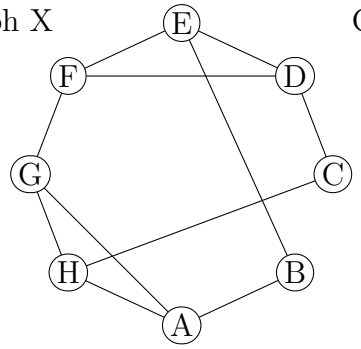
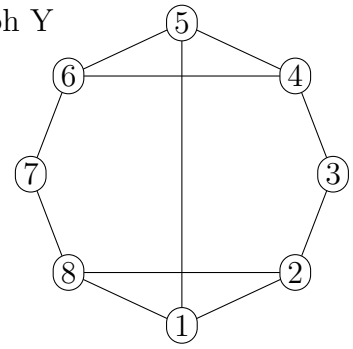
Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

1. (10 points) Are graphs X and Y (below) isomorphic? Justify your answer.

Graph X



Graph Y



2. (5 points) The degree sequence of a graph is the list of the degrees of all the nodes in the graph, arranged in numerical order, largest to smallest. Suppose that graph G has degree sequence 1, 1, 1, 1, 1, 1. How many connected components does G have?

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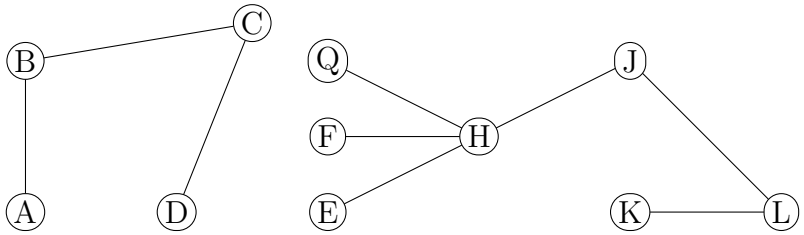
1. (10 points) How many isomorphisms are there from G (below) to itself? Justify your answer and/or show your work clearly .



2. (5 points) Is the cycle graph C_{17} a subgraph of the wheel graph W_{23}? Briefly justify your answer.

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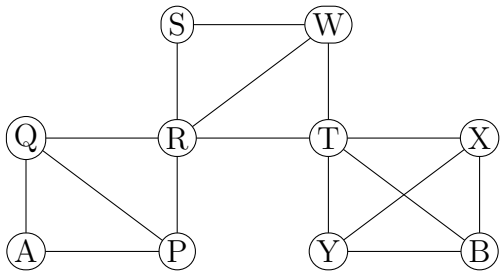
Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

1. (10 points) How many isomorphisms are there from G (below) to itself? Justify your answer and/or show your work clearly .



2. (5 points) The degree sequence of a graph is the list of the degrees of all the nodes in the graph, arranged in numerical order, largest to smallest. Suppose graph G has degree sequence 1, 1, 1, 1, 2. Is G connected? Briefly justify your answer.

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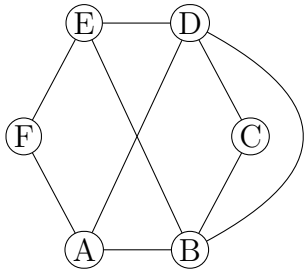
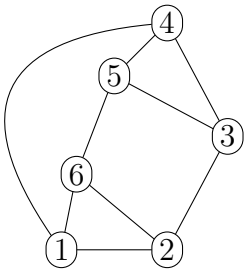
Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

1. (10 points) Are graphs X and Y (below) isomorphic? Justify your answer.

Graph X



Graph Y



2. (5 points) Is the graph C_{10} bipartite? Briefly justify your answer.