

CS 173, Spring 2016

Examlet 6, Part A

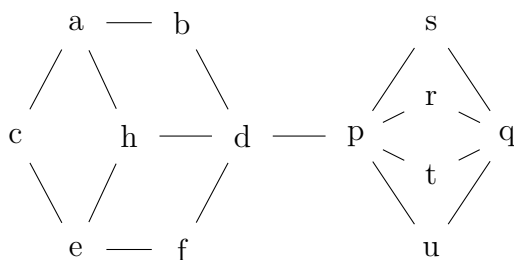
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Discussion:    Monday    9    10    11    12    1    2    3    4    5

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  $W_{10}$  has 10 nodes on the rim. Is it bipartite? Briefly justify your answer.

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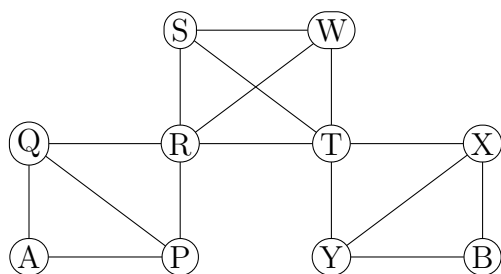
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Discussion: Monday 9 10 11 12 1 2 3 4 5

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) How many edges are in the complete bipartite graph  $K_{10,5}$ ?

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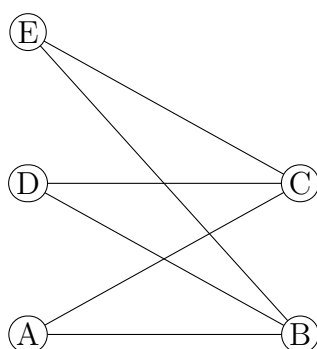
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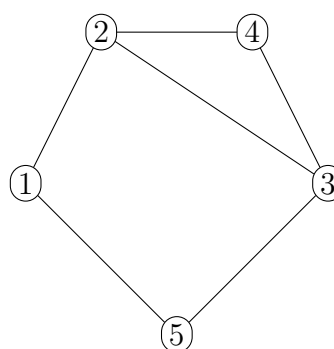
**Discussion:**    **Monday**    **9**    **10**    **11**    **12**    **1**    **2**    **3**    **4**    **5**

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

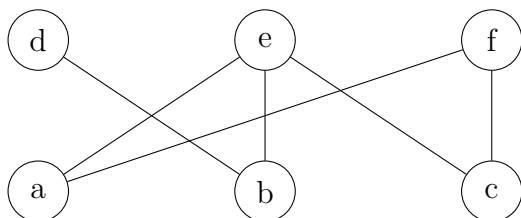
Graph X



Graph Y



2. (5 points) Is this graph bipartite? Briefly justify your answer.



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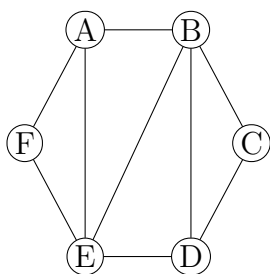
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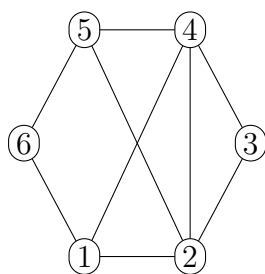
**Discussion:   Monday   9   10   11   12   1   2   3   4   5**

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

Graph X



Graph Y



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

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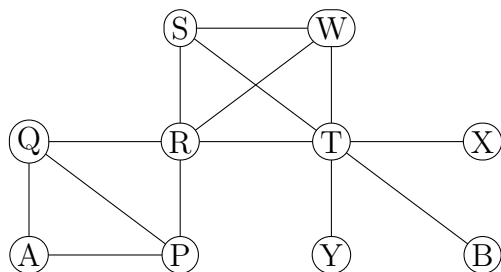
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1. (10 points) How many isomorphisms are there from  $G$  (below) to itself? Justify your answer and/or show your work clearly .



2. (5 points) Does the complete graph  $K_8$  have an Euler circuit?

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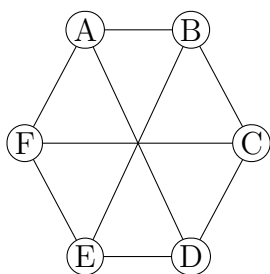
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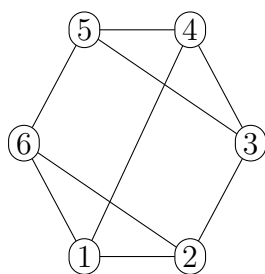
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1. (10 points) Are graphs X and Y (below) isomorphic? Justify your answer.

Graph X



Graph Y



2. (5 points) Explain what a cut edge is.