CSDS 455: Homework 25

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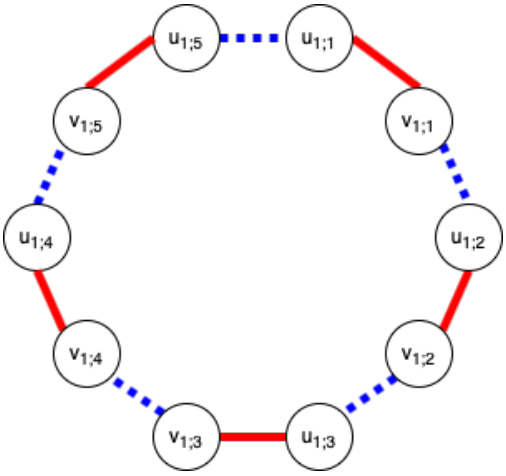
Problem 1

Figure 9b is the $H(\alpha, 2q)$ graph for the shape of Figure 9a with $q = 4$. What is the $H(\alpha, 2q)$ graph when $q = 5$? Justify your answer.

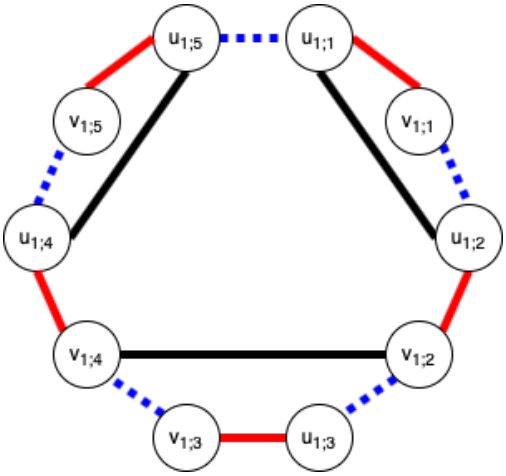


I believe this is the correct representation of $q = 5$ as we have 5 copies of U and V. Since we only got 1 edge in Figure 9a so we don't have to worry about the edge with both endpoints on U or V (thus no double purple edges).

Problem 2

Figres 12 and 13 are constraint graphs for the equivalent shape and H graph of Figure 9a and 9b with q=4. What are equivalent constraint graphs when $q = 5$

I don't quite get how injection works on this graph and how it is "equal," but by mimicing the examples this seems to be true as we can have every edge appears twices.


$u_{1;5}$
$u_{1;1}$
$v_{1;5}$
$v_{1;1}$
$u_{1;4}$
$u_{1;2}$
$v_{1;4}$
$v_{1;2}$
$v_{1;3}$
$u_{1;3}$