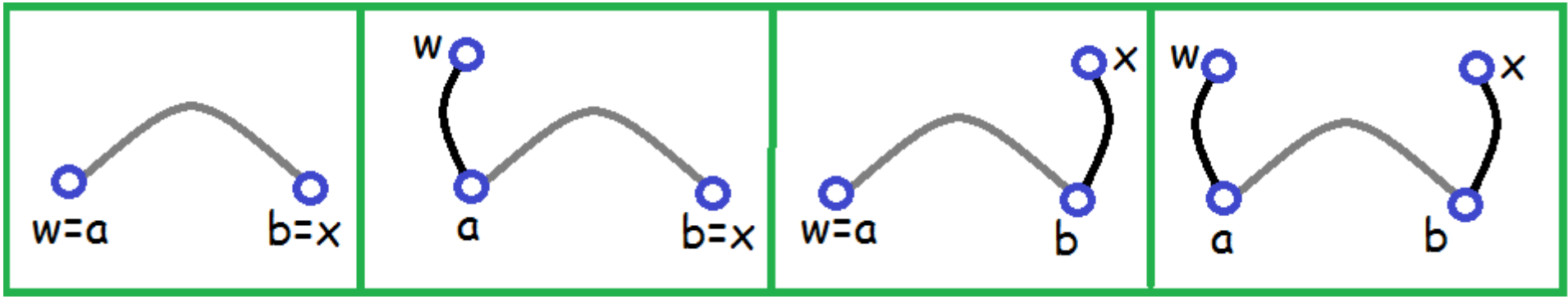
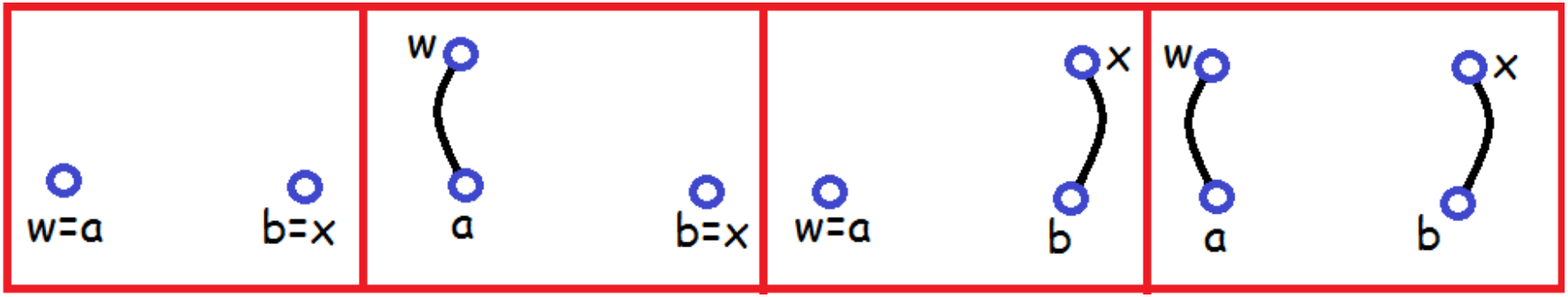
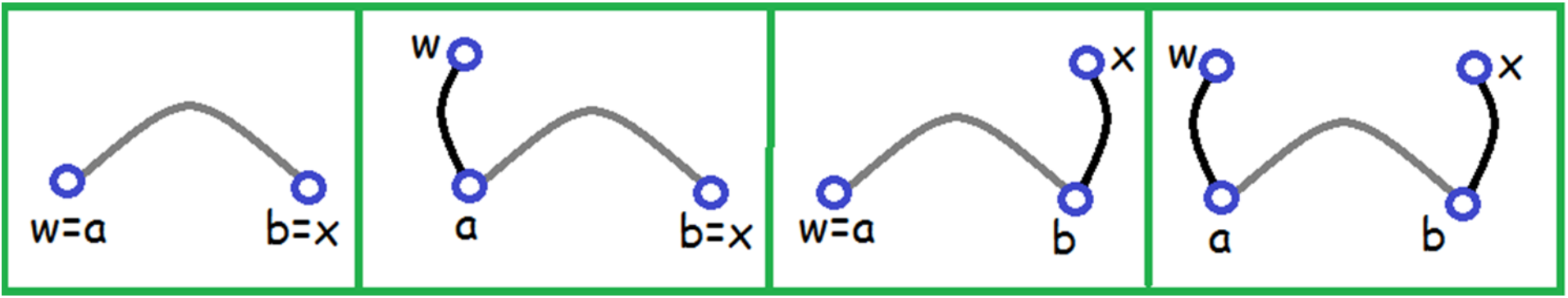
Variable	Subgraph reduced onto (a, b)	Endpoints
$P_1(a, b)$	Path from w to a to b to x	$w = a,\ x = b$
$P_1(\bar{a}, b)$	Path from w to a to b to x	$w \neq a,\ x = b$
$P_1(a, \bar{b})$	Path from w to a to b to x	$w = a,\ x \neq b$
$P_1(\bar{a}, \bar{b})$	Path from w to a to b to x	$w \neq a,\ x \neq b$

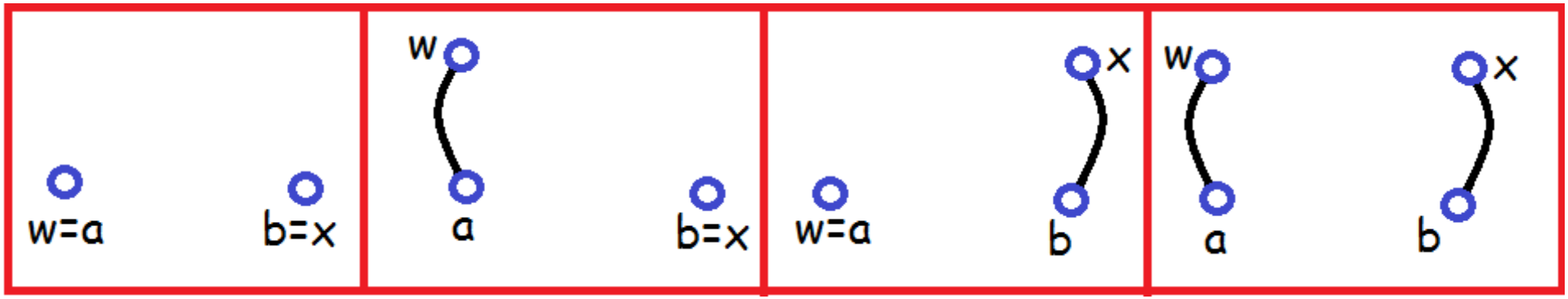


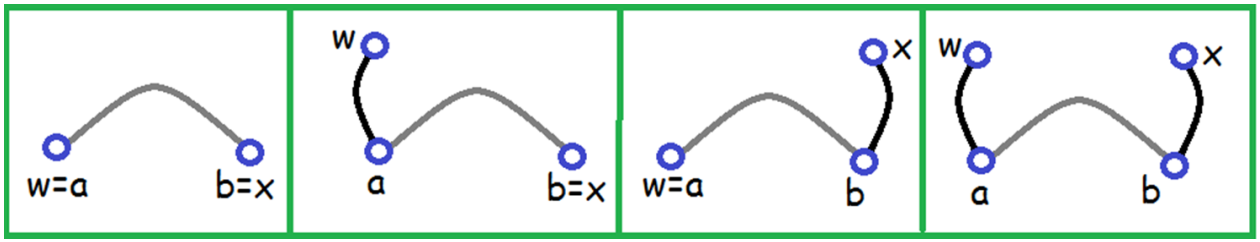
$P_2(a, b)$	Two paths from w to a and from b to x	$w = a, x = b$
$P_2(\bar{a}, b)$	Two paths from w to a and from b to x	$w \neq a, x = b$
$P_2(a, \bar{b})$	Two paths from w to a and from b to x	$w = a, x \neq b$
$P_2(\bar{a}, \bar{b})$	Two paths from w to a and from b to x	$w \neq a, x \neq b$

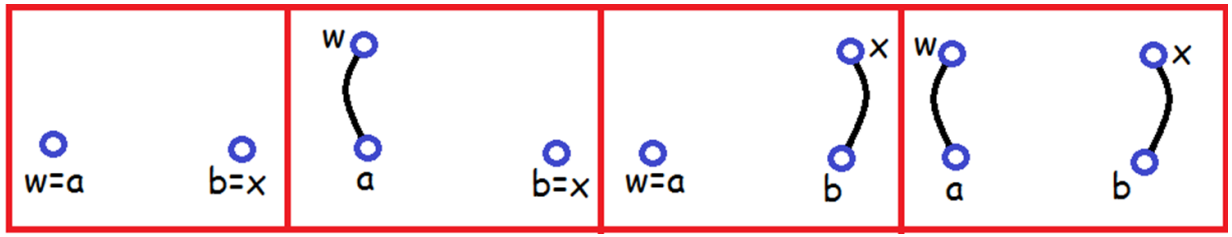


The initial subgraph reduced onto an edge (u,v) is:



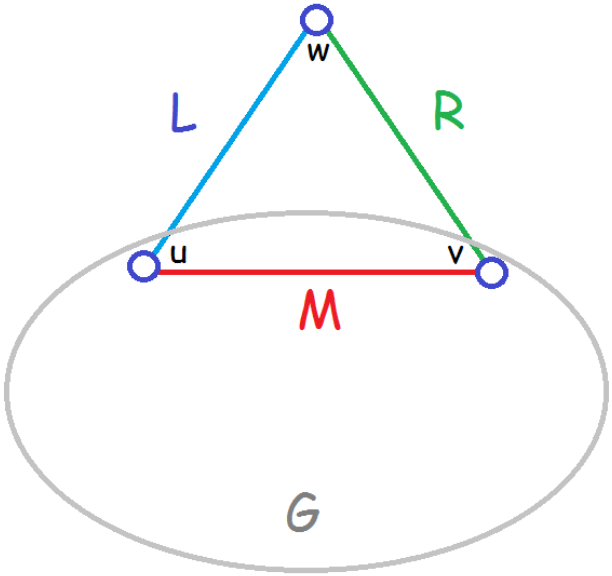


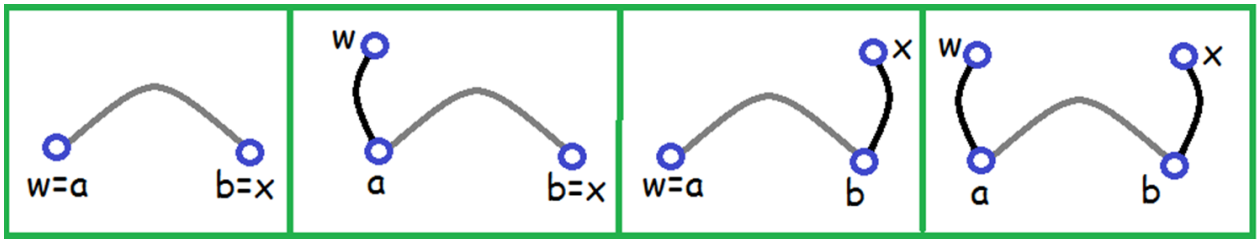


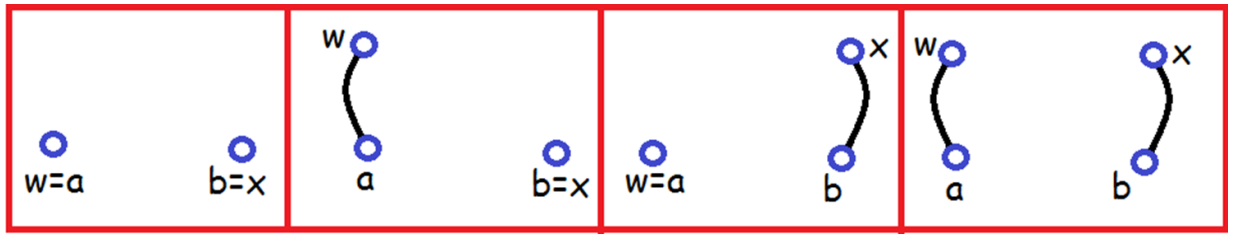


What does the picture look like that corresponds to

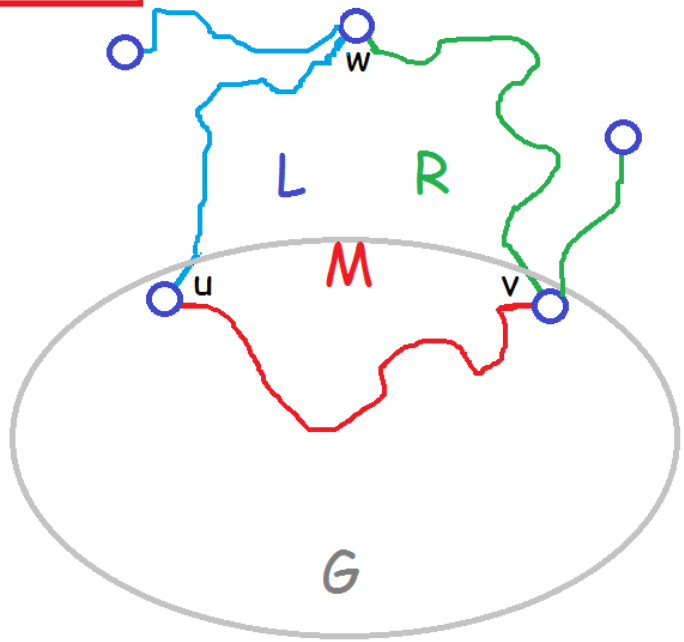
$$p_1(u, \bar{w})$$
$$p_1(w, \bar{v})$$
$$p_1(u, v)$$



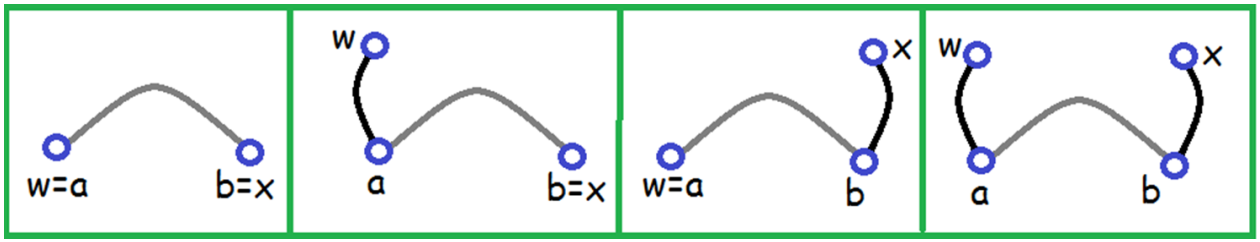


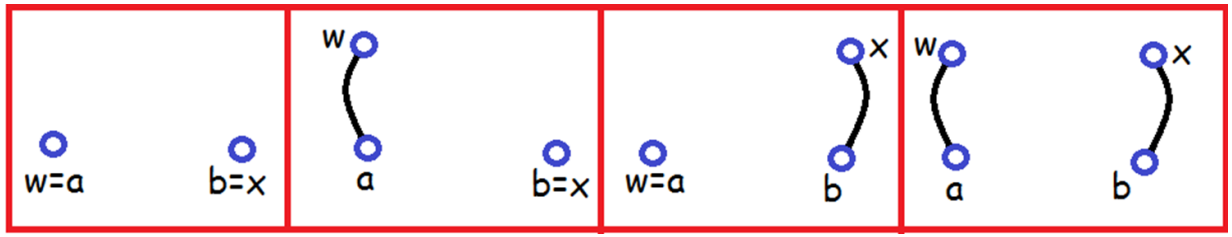


$p_1(u, \bar{w})$
$p_1(w, \bar{v})$
$p_1(u, v)$



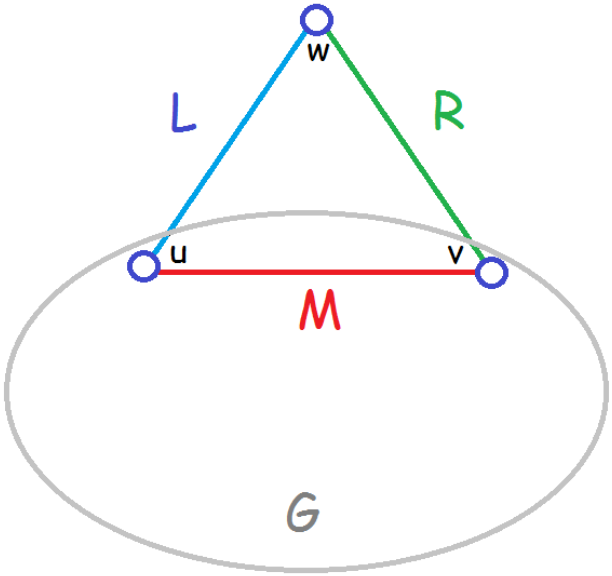
This is not a subgraph of a Hamilton path.

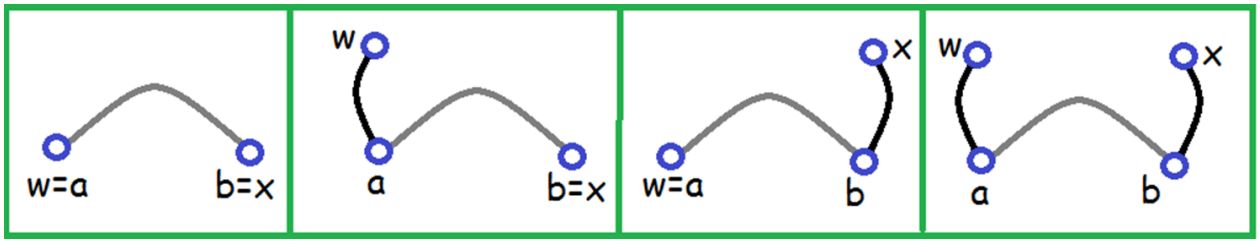


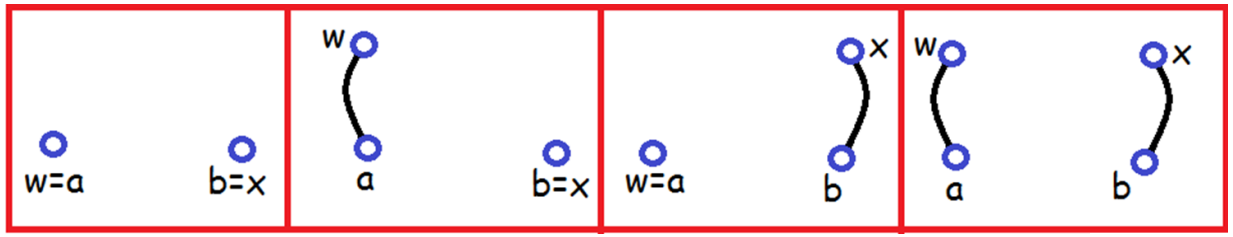


What does the picture look like that corresponds to

$$p_1(u, \bar{w})$$
$$p_2(w, \bar{v})$$
$$p_1(u, v)$$



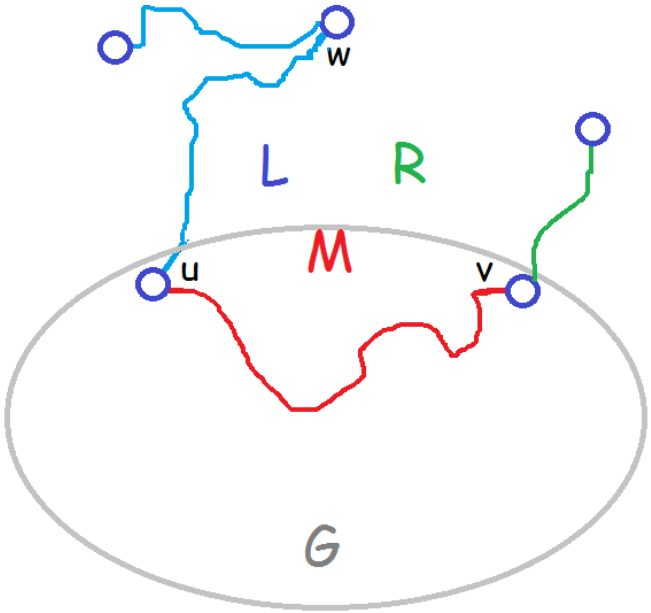




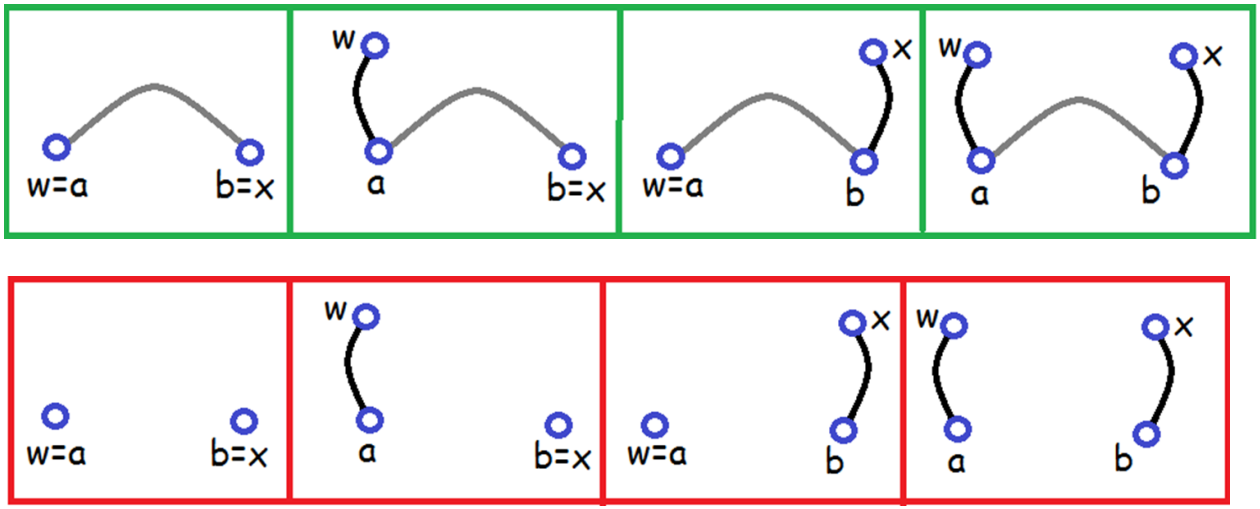
$p_1(u, \bar{w})$

$p_2(w, \bar{v})$

$p_1(u, v)$



If G has only vertices u and v, this is a Hamilton path.

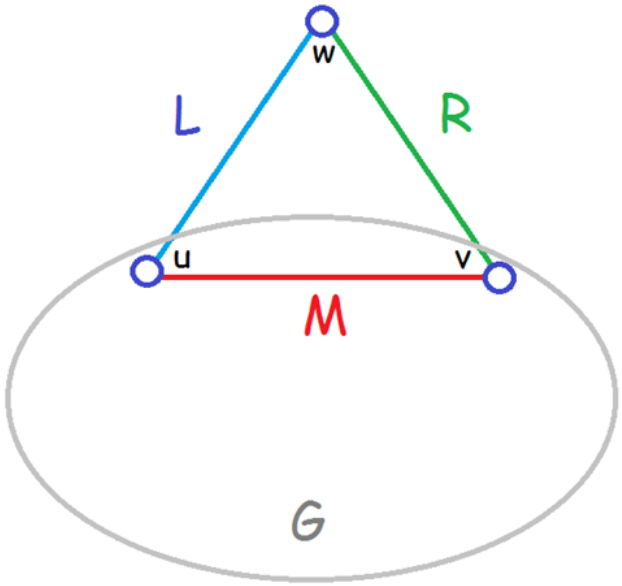


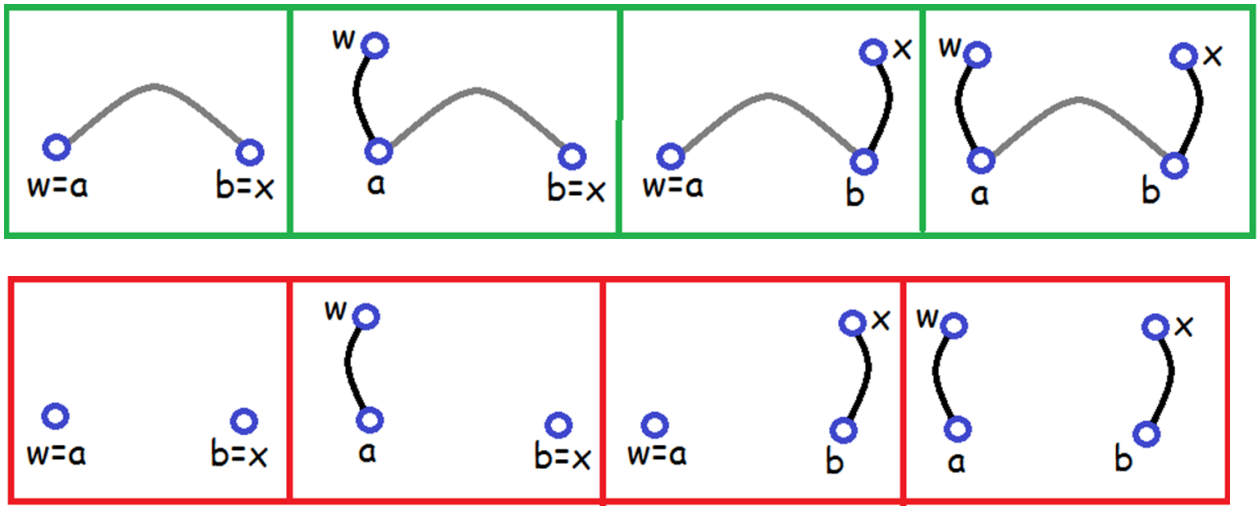
What does the picture look like that corresponds to

$p_1(\bar{u}, \mathrm{w})$

$p_2(\bar{w}, \mathrm{v})$

$p_2(u, \bar{v})$



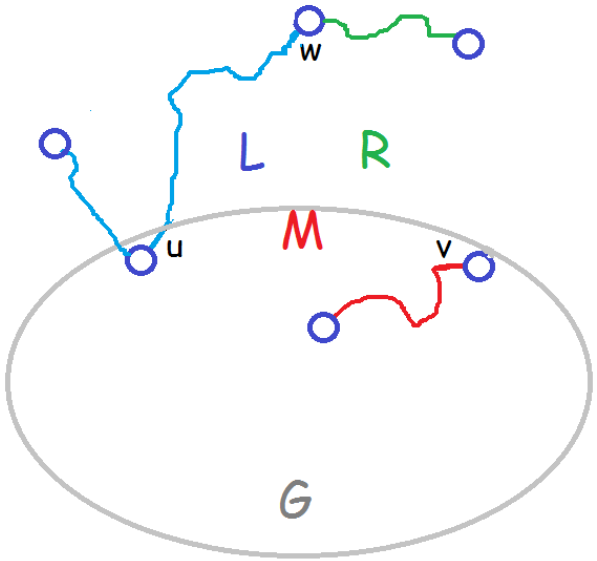


What does the picture look like that corresponds to

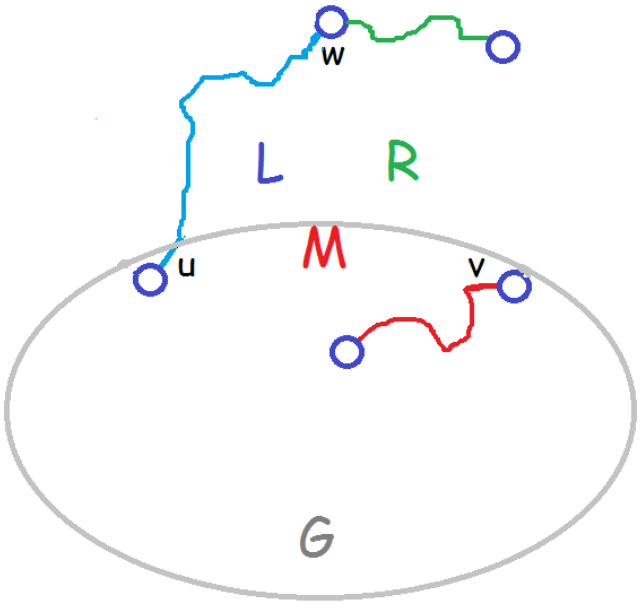
$p_1(\bar{u}, \mathrm{w})$

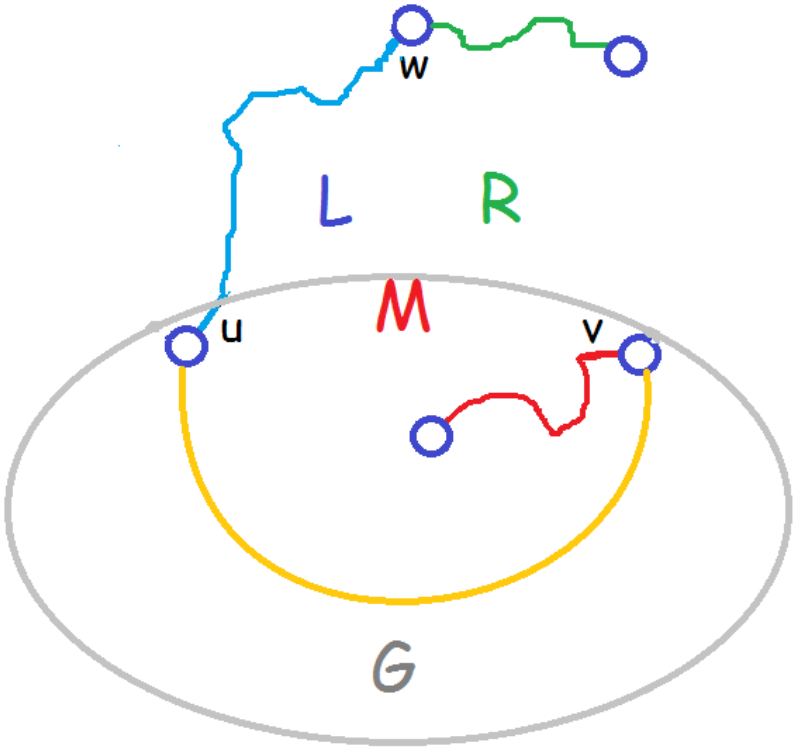
$p_2(\bar{w}, \mathrm{v})$

$p_2(u, \bar{v})$



This one can be extended to a Hamilton path of the whole graph by using a Hamilton path from G that connects u to v:





We have 8 choices for each of the L, R and M edges.

But many of these do not look like the paths we need to build a Hamilton path.

Which combinations could contribute?

I am very sorry to hear that one of my collaborators in the 120-cell work passed away in a fire on Wednesday evening.

Michel Marie Deza