graph	rotation system
H_1	$((2,4,3),(1,3,4),(1,4,2),(1,2,3))$
H_2^R	$((2,4,3),(1,4,3),(1,2,4),(1,2,3))$
H_3^R	$((2,3,4),(1,3,4),(1,2,4),(1,2,3))$
H_4^R	$((2,3,4),(1,4,3),(1,4,2),(1,2,3))$
H_1^R	$((2,3,4),(1,4,3),(1,2,4),(1,3,2))$
H_2	$((2,3,4),(1,3,4),(1,4,2),(1,3,2))$
H_3	$((2,4,3),(1,4,3),(1,4,2),(1,3,2))$
H_4	$((2,4,3),(1,3,4),(1,2,4),(1,3,2))$