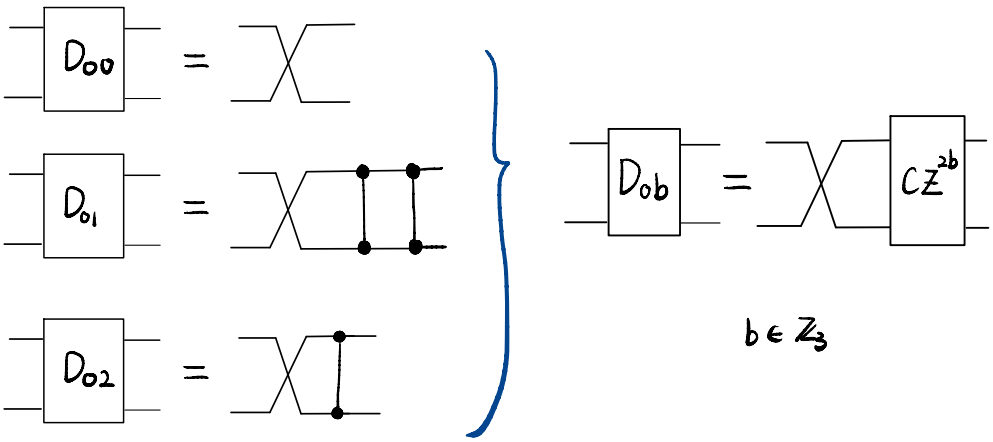
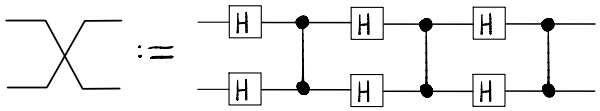
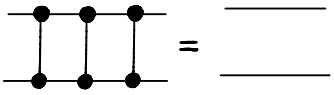
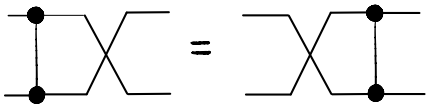
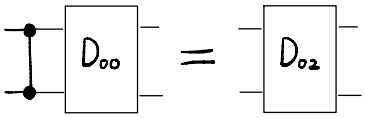
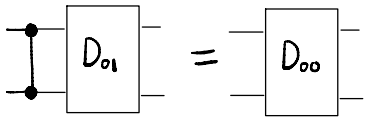
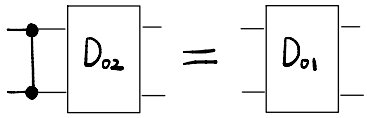


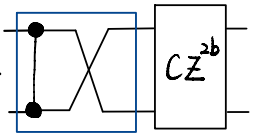
Def 3 : 

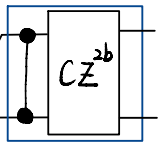
C_6 :  R17 : 

Lem 1 By Def 3, C_6 & R_{17}, 23. (1) 

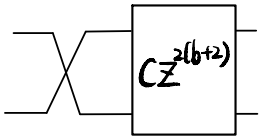
(2) 

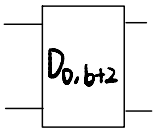
(3) 

Proof : 23. (1) / (2) / (3). LHS = 

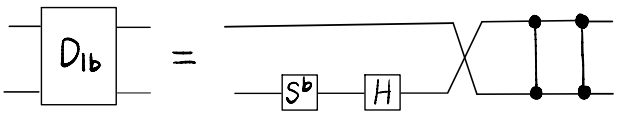
$\overset{R_{17}}{=}$ 

$CZ^{2b+1} = CZ^{2b+4} = CZ^{2(b+2)}$

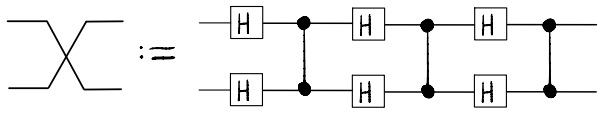
$\overset{C_6}{=}$ 

$\overset{\text{def}}{=}$ 

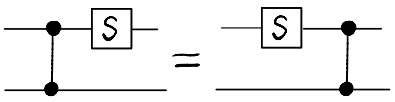
= 23. (1) / (2) / (3). RHS



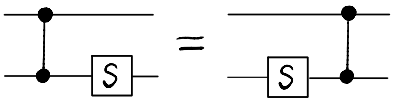
Def 3 :



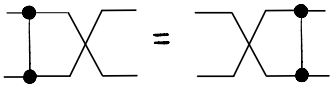
C_7 : (1)



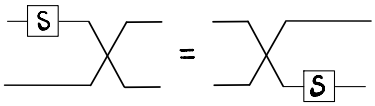
(2)



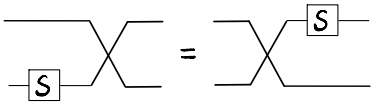
R_{17} :



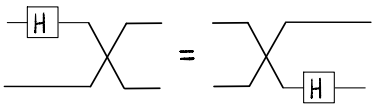
R_{18} : (1)



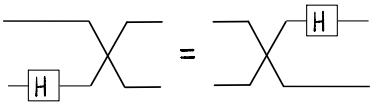
(2)



R_{19} : (1)

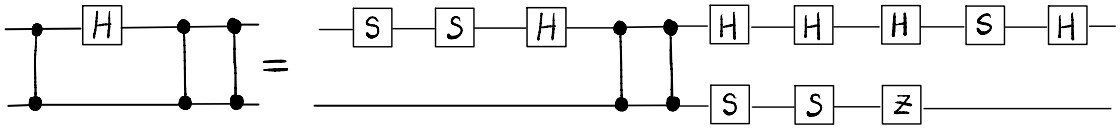


(2)



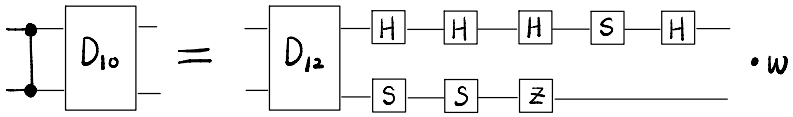
C_3 : $S^3 = I$

R_{28} :

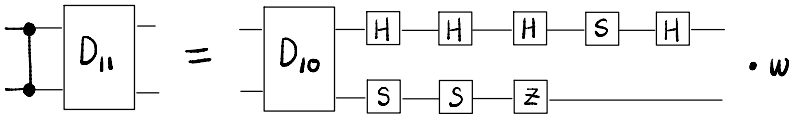


Lem 2 By Def 3, R_{17}, R_{18}, R_{19}, R_{28}, C_3, C_7,

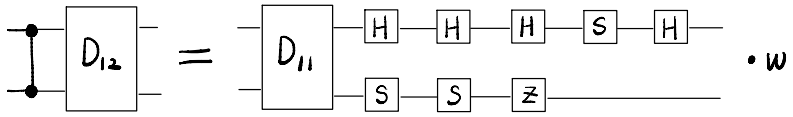
23. (4)



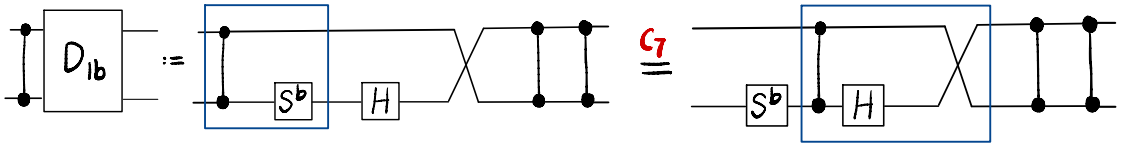
(5)



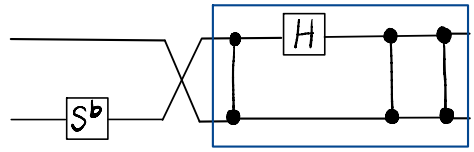
(6)



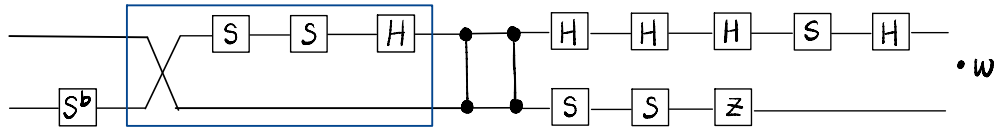
Proof : 23.(4)/(5)/(6). LHS :=



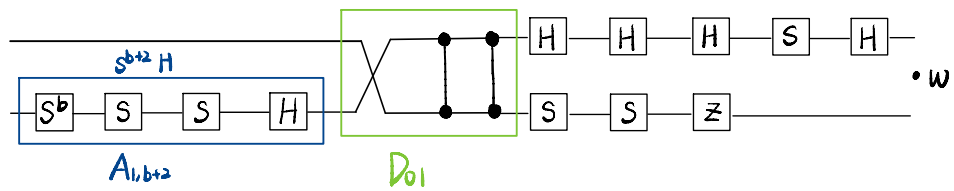
R_{17} = R_{19}



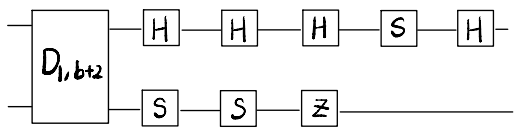
R_{28} =



R_{18}, R_{19} = C_3

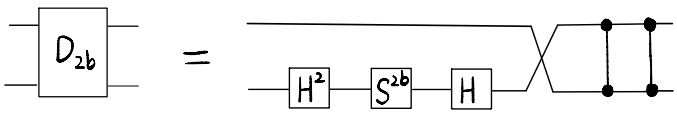


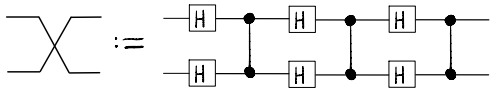
def =

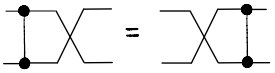


• w =: 23.(4)/(5)/(6). RHS.

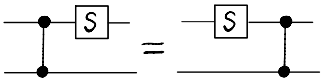
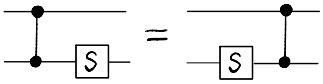
∎

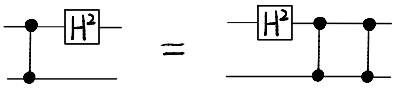


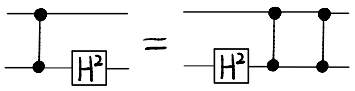
Def 3 : 

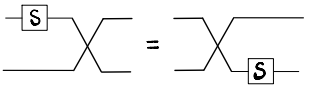
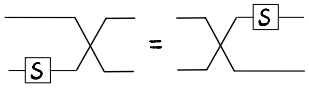
R_{17} : 

C2 : $H^4 = I$ C3 : $S^3 = I$

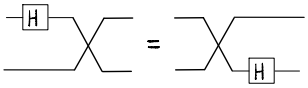
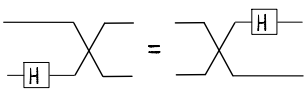
C_7 : (1)  (2) 

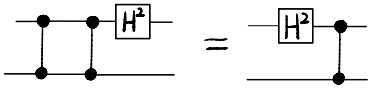
C_8 : (1) 

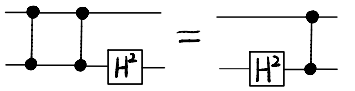
(2) 

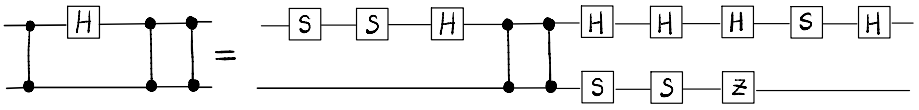
R_{18} : (1)  (2) 

R3 : $SZ = ZS$

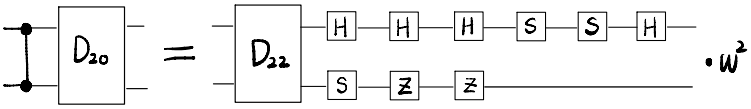
R_{19} : (1)  (2) 

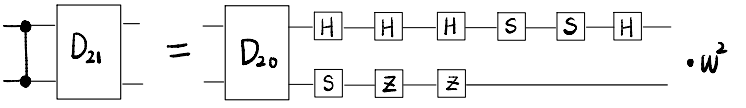
C_8' : (1) 

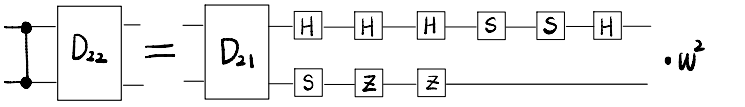
(2) 

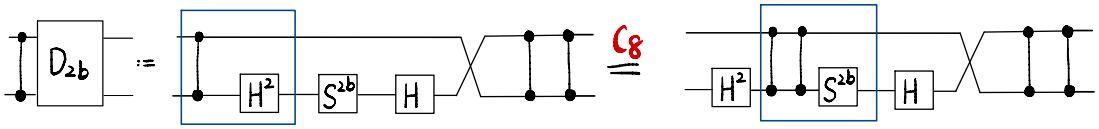
R_{28} : 

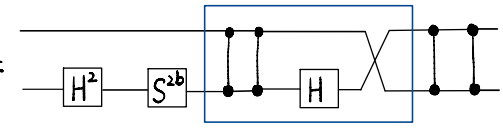
Lem 3 By Def 3, C_2, C_3, C_7, C_8, R_3, R_{17}, R_{18}, R_{19} & R_{28},

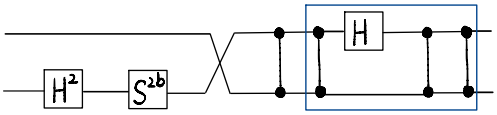
23. (7) 

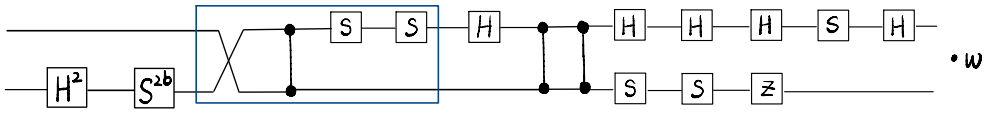
(8) 

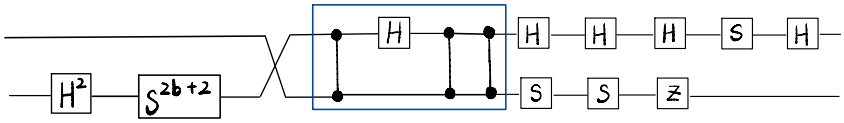
(9) 

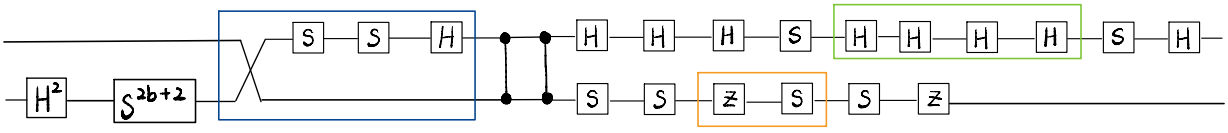
Proof : 23.(7)/(8)/(9). LHS = 

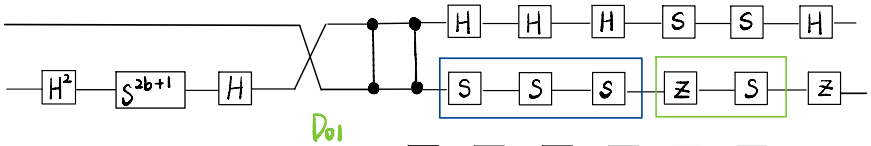
C_7 = 

R_{17} / R_{19} = 

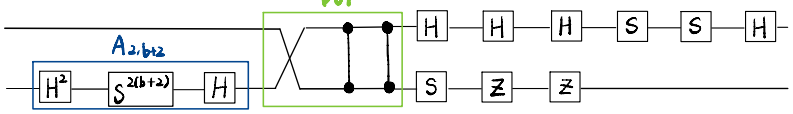
R_{28} = 

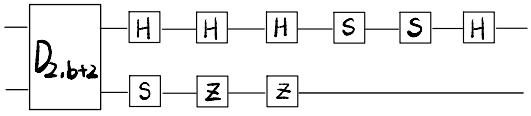
C_3, C_7 / R_{18} 

R_{28} = 

C_3, C_6, R_3 / R_{18}, R_{19} 

$S^{2b+2} S^2 = S^{2b+4} = S^{2(b+2)}$

C_3 / R_3 

def 

= 23.(7)/(8)/(9).RHS ☐