

BLG 322E
HW2

a) Penalty: 7 Clock cycles

		T1	T2	T3	T4	T5	T6	T7	T8	T9	10	11	12	13	14	15	16	17	18
ADD	R6,R7,R8	F	D	O	A														
NOP	-		F	D	O	A													
LD	0(R8),R1			F	D	O	A	M											
LD	0(R11),R2				F	D	O	A	M										
NOP	-					F	D	O	A										
NOP	-						F	D	O	A									
ADD	R1,R2,R3							F	D	O	A								
NOP	-							F	D	O	A								
ADD	R0,R3,R4								F	D	O	A							
ST	0(R12),R3								F	D	O	A	M						
BA	L2									F	D	O	A						
NOP	-									F	D	O	A						
NOP	-										F	D	O	A					
NOP	-											F	D	O	A				
ADD	R0,0,R3															F	D	O	A

b) Penalty: 4 Clock cycles

		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15
LD	0(R11),R2	F	D	O	A	<u>M</u>										
ADD	R6,R7,R8		F	D	O	<u>A</u>										
NOP	-			F	D	O	A									
ADD	R1,R2,R3				F	D	<u>Q</u>	<u>A</u>								
LD	0(R8),R1					F	D	<u>O</u>	A	M						
ADD	R0,R3,R4						F	D	<u>Q</u>	A						
ST	0(R12),R3							F	D	O	A	M				
BA	L2								F	D	O	<u>A</u>				
NOP	-									F	D	O	A			
NOP	-										F	D	O	A		
NOP	-											F	D	O	A	
ADD	R0,0,R3												<u>F</u>	D	O	A