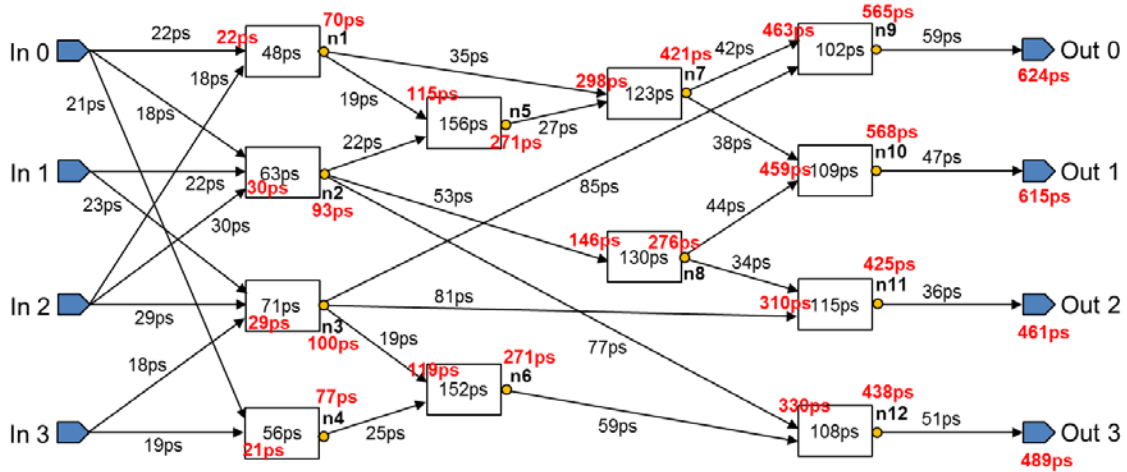


Homework Assignment 9

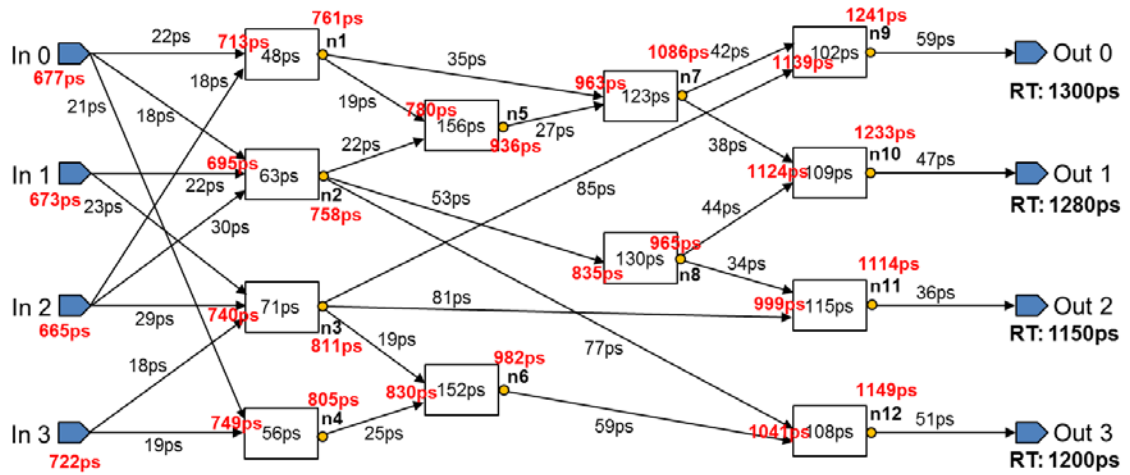
(Due Apr. 26th at the beginning of the class)

1. [Timing Analysis, **15 points**] The following shows the delay of each net and cell. Compute arrival time at each node (n1 ~ n12, Out 0 ~ Out 3) shown below. Arrival time at each input pin is zero.



	Arrival time		Arrival time
n1	70ps	n9	565ps
n2	93ps	n10	568ps
n3	100ps	n11	425ps
n4	77ps	n12	438ps
n5	271ps	Out 0	624ps
n6	271ps	Out 1	615ps
n7	421ps	Out 2	461ps
n8	276ps	Out 3	489ps

2. [Timing Analysis, **15 points**] The following shows the delay of each net and cell and the required time at each output. Compute required time at each node (n1 ~ n12, In 0 ~ In 3).



	Required time		Required time
n1	761ps	n9	1241ps
n2	758ps	n10	1233ps
n3	811ps	n11	1114ps
n4	805ps	n12	1149ps
n5	936ps	In 0	677ps
n6	982ps	In 1	673ps
n7	1086ps	In 2	665ps
n8	965ps	In 3	722ps