

Chapter 7

Models of Various Forms of Batching

7.1.

	$k = 1$	$k = 2$	$k = 3$	$k = 4$	$k = 5$
CT_s	4.68 hr	5.56 hr	6.44 hr	7.31 hr	8.19 hr

7.3.

	$k = 3$	$k = 4$	$k = 5$	$k = 6$	$k = 7$	$k = 8$	$k = 9$
u	0.933	0.850	0.800	0.767	0.743	0.725	0.711
CT_s	4.694 hr	2.441 hr	2.156 hr	2.151 hr	2.238 hr	2.366	2.517
C_d^2	1.283	1.541	1.750	1.938	2.117	2.289	2.458

7.5.

k	$C_d^2(B)$	$C_d^2(I)$	p	$C_d^2(I)$
4	0.8	6.2	0.25	2.30
4	0.8	6.2	0.50	3.60
4	0.8	6.2	0.75	4.90
5	2.0	14	0.25	4.25
5	2.0	14	0.50	7.50
5	2.0	14	0.75	10.75

7.7.

$CT_q = 1.311$ hr; therefore, $CT = 1.311 + 0.16 = 1.471$ hr.

7.9.

WS	Util.	Cycle	
		Time	WIP
#1	0.775	3.656 hr	21.935
#2	0.900	9.530 hr	42.883
#3	0.600	1.235 hr	3.705
System		11.421 hr	68.523

7.11.

(a)

WS	Util.	Cycle Time	WIP
#1	0.819	0.785 hr	6.432
#2	0.782	0.831 hr	4.997
#3	0.958	7.268 hr	53.555
#4	0.796	5.029 hr	25.014
System		25.714 hr	89.998

(b)

WS	Util.	Cycle Time	WIP
#1	0.819	0.784 hr	6.423
#2	0.782	0.830 hr	4.995
#3	0.958	6.869 hr	50.611
#4	0.796	5.024 hr	25.013
System		24.869 hr	87.041