

GROUND DELAY PROGRAM

1. Ration by Schedule (80 pts)

The schedule for arriving flights at an airport is shown in the left columns in the table below. The capacity of the airport is one flight every ten minutes.

The schedule is in excess of the capacity of the airport and a Ground Delay Program is put in place. Flights are assigned arrival slots. Each slot is 10 minutes.

- Assign slots to each flight in the Original Schedule using Ration-by-Schedule. Use the order of the flights listed in the schedule (20 pts).
- Compute the delays for each flight. (20 pts)
- Compute the Total Delays and the Delays for each Airline (20 pts).

Original Schedule

Original Schedule		(a) Ration-by-Schedule	(b) CTA - Delay
7:00	A1, A2		
7:05	B1, B2		
7:10	B3, B4		
7:15			
7:20	A3, C1		
7:25			
7:30			
7:35			
7:40	B5, C2		
7:45			
7:50			
7:55			
8:00			
8:05			
8:10			
8:15			
8:20	A4		
8:25			
8:30			
8:35			
8:40	B6		
8:45			
8:50			
(c)		Total Flight Delay	Mins
		Total Delay Airline A	
		Total Delay Airline B	
		Total Delay Airline C	

2. Effect of Cancellations (20pts)

Airlines may cancel flights due to mechanical problems or for strategic reasons. The airline may choose to hold the slot or give the slot up for use by other airlines.

- a) Flight A2 is cancelled. Airline A chooses to HOLD their slot (and not make it available to other airlines).

What is the effect on Total Delay, Total Delay Airline A, Total Delay Airline B, and Total Delay Airline C (4 pts)

- b) Flight A2 is cancelled. Airline A chooses to RELEASE their slot (and make it available to other airlines).

What is the effect on Total Delay, Total Delay Airline A, Total Delay Airline B, and Total Delay Airline C (4 pts)
