



**Machine A parameters (minutes):**

work time mean: 91  
work time std: 9

mean down time: 400  
std down time: 30

mean repair time: 15  
std repair time: 14

part-arrival time mean: 100  
part-arrival time std: 5

**Machine B parameters (minutes):**

work time b-parts mean: 15  
work time b-parts std: 3

work time a-parts mean: 110  
work time a-parts std: 10

mean down time: 200  
std down time: 15

mean repair time: 10  
std repair time: 8

part-arrival time mean: 12  
part-arrival time std: 5

**Machine C parameters (minutes):**

work time mean: 15  
work time std: 3

part-arrival time mean: 12  
part-arrival time std: 5

**Details:**

Each machine can process one part at a time. Machine A only processes a-parts. Machine B only processes b-parts, as long as machine A is working and not broken. Once machine A breaks and requires maintenance, machine B will process a-parts which are in queue of machine A and the a-parts are prioritised compared to b-parts, and are processed before b-parts. If machine B breaks, the b-parts in its queue will remain there and machine B will continue processing the parts after being repaired. If a machine breaks while processing a part, the part will remain in the machine and resume its process after the machine is repaired. Machine C processes both parts after the parts are first processed either by machine A or machine B. Machine C prioritises a-parts to b-parts.