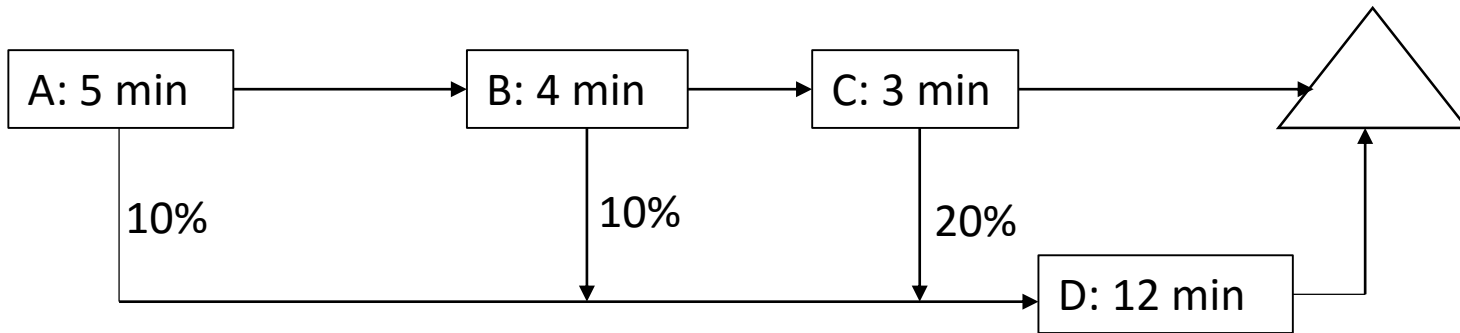


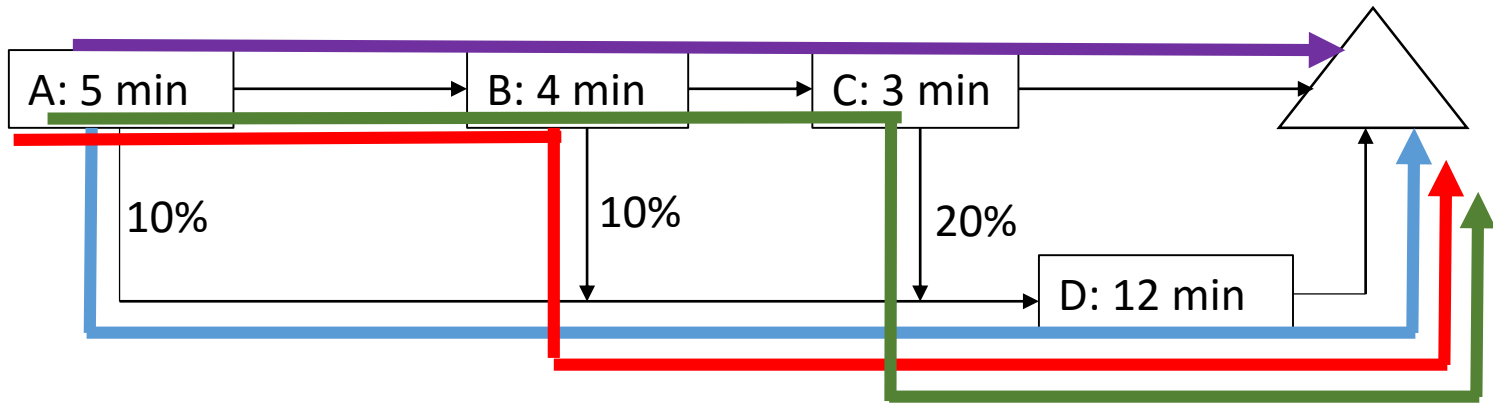
# An example with defects

- Where is the bottleneck?



- D takes the longest, so would it be the bottleneck?

- Not necessarily!
- In this case we have a product mix!



- Type I: 10%
- Type II:  $90\% * 10\% = 9\%$
- Type III:  $90\% * 90\% * 20\% = 16.2\%$
- Type IV:  $90\% * 90\% * 80\% = 64.8\%$
- They sum up to 100%

Type		I	II	III	IV	MIX
ratio		0.1	0.09	0.162	0.648	1
A	5min	0.5	0.45	0.81	3.24	5
B	4min		0.36	0.648	2.592	3.6
C	3min			0.486	1.944	2.43
D	12min	1.2	1.08	1.944		4.224