Problem 2

a) How many users successfully sent their packages without colliding?

User 1 and user 5 in slot 3 and slot 5

b) SFC

User 1 → User 5 → User 3 → User 2

c) Average throughput

$$\frac{\left(1-\frac{1}{4}\right)^{4-1}+\left(1-\frac{1}{16}\right)^{16-1}}{2}=0,4$$

Problem 3

a) Node 0 → Node 6

$60+20+60+20+0+160+80=410$ [ms]

b) Efficiency (time waste)

c) Time limit of 50 ms:
Node 0 → Node 6 is finished
R1: $50+30+50+20+0+50+50+50$
R2: $10+0+10+0+0+50+30=400$ [ms]

d)

Increased: Node 0, 2, 5

Decreased: Node 1, 3, 6, 7

Unchanged: Node 4

e) $Avg_{317}=\frac{60+50+30}{3}=46,6$ [ms]

300 ms before token comes back

$\frac{300}{46,6}=6,43$ Minimum: 6 Maximum: 7 ← with Round Robin

- Does the same apply for Round Robin and not?
  NO due to the time limit of the nodes
- If you fx. give the token to node 5 the avg is different, so YES