

### Question 3

F	File size
S	Segment size
H	Header (80 bits)
L	Packet size $L = 80 + S$
	3 Links

The delay necessary to send all segments is:

$$T_{delay} = 3 * \frac{S + 80}{R} + \left(\frac{F}{S} - 1\right) * \frac{S + 80}{R}$$

The minimum segment size is obtained when the derivative of  $T_{delay}$  in relation to segment  $S$  equals to zero:

$$\frac{dT_{delay}}{dS} = 0$$

The final result is:

$$S = \sqrt{40 * F}$$