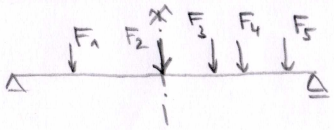
c) maximální možný moment - max max M

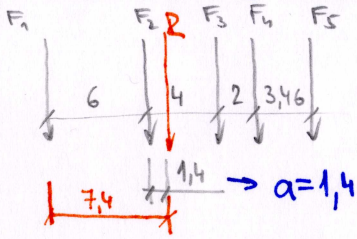
1) Winklerovo kritérium pro $x = \frac{L}{2}$ $(x = 10\,m)$

$k = 2 \ldots 200 \leq \left(\frac{10}{20} \cdot 790\right) = 395 \leq 400$ ✓

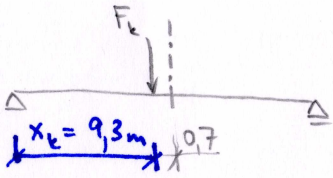


$\Rightarrow F_k = F_2$

2) Břemenové kritérium pro F_2



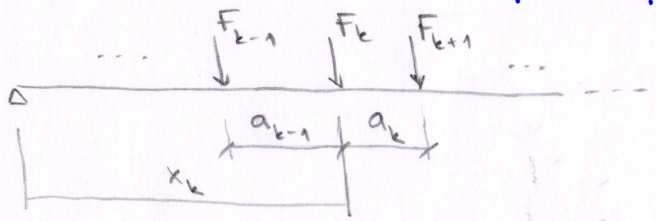
$\rightarrow a = 1{,}4\,m \rightarrow 9/2 = 0{,}7\,m \Rightarrow$



3) Šolinovo kritérium

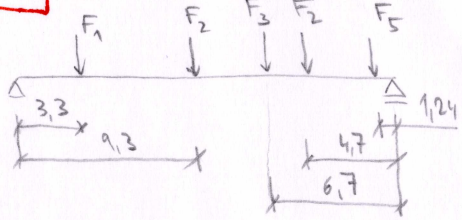
$$\frac{1}{p} \cdot \sum_{i=1}^{k-1} F_i < \frac{1}{L} \sum_{i=1}^{n} F_i < \frac{1}{q} \cdot \sum_{i=1}^{k} F_i$$

$p = x_k - \frac{a_{k-1}}{4}$ $\qquad q = x_k + \frac{a_k}{4}$



$F_k = F_2 \Rightarrow$ $\quad p = 9{,}3 - \frac{6}{4} = 7{,}8\,m$

$q = 9{,}3 + \frac{4}{4} = 10{,}3\,m$

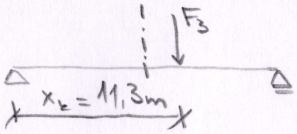


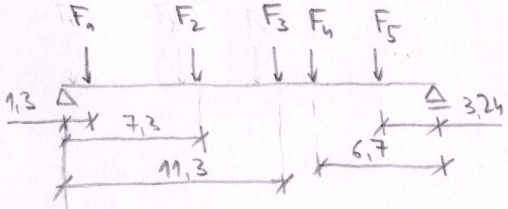
$\left(\frac{1}{7{,}8} \cdot 200\right) < \left(\frac{1}{20} \cdot 790\right) < \left(\frac{1}{10{,}3} \cdot 400\right)$

$25{,}641 < 39{,}5 < 38{,}835$ ✗

$\Rightarrow$ pod silou F_2 nevznikne max max M

$\rightarrow$ břemenové kritérium pro F_3





$\rightarrow$ Šolinovo kritérium: $\quad p = 11{,}3 - \frac{4}{4} = 10{,}3\,m$

$q = 11{,}3 + \frac{2}{4} = 10{,}8\,m$

$\left(\frac{1}{10{,}3} \cdot 400\right) < \left(\frac{1}{20} \cdot 790\right) < \left(\frac{1}{11{,}8} \cdot 590\right)$

$38{,}835 < 39{,}5 < 50$ ✓ $\Rightarrow$ max max M vznikne pod silou F_3

max max M = 2243,755 kNm (výpočet - viz břemenové kritérium F_3)