

①

$$P_0 = \frac{1}{\frac{1}{0!} \cdot \left(\frac{4}{2}\right)^0 + \frac{1}{1!} \left(\frac{4}{2}\right)^1 + \frac{1}{2!} \left(\frac{4}{2}\right)^2 + \frac{1}{3!} \left(\frac{4}{2}\right)^3 + \frac{1}{4!} \left(\frac{4}{2}\right)^4} =$$

$$P_0 = \frac{1}{1 + 2 + 2 + 1,33 + 0,66} = \frac{1}{6,99} = 14,3\%$$

$$P_1 = \frac{1}{1!} \cdot \left(\frac{4}{2}\right)^1 \cdot 0,143 = 28,6\%$$

$$P_2 = \frac{1}{2!} \left(\frac{4}{2}\right)^2 \cdot 0,143 = 28,6\%$$

$$P_3 = \frac{1}{3!} \left(\frac{4}{2}\right)^3 \cdot 0,143 = 19\%$$

$$P_4 = \frac{1}{4!} \left(\frac{4}{2}\right)^4 \cdot 0,143 = 9,5\%$$

Právě 2 vlaky

$$P_2 = 28,6\%$$

$$P_2 = \frac{1}{2!} \left(\frac{4}{2}\right)^2 \cdot 0,286 = 57,2\% ?$$

Splňuje podmínku ?

$$\text{ANO} \rightarrow P_4 = 9,5\%$$

② Pravděpodobnost odmítnutí

$$P_6 = \left(\frac{1}{(6)!}\right) \cdot \left(\frac{4}{2}\right)^6 \cdot 0,136 = 1,22\%$$

Pravděpodobnost správného parkování

$$P_0 = \frac{1}{1 + 2 + 2 + 1,33 + 0,66 + 0,26 + 0,088} = 13,6\%$$

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Alespoň 2 letadla

$$P_2 = \frac{1}{2!} \cdot \left(\frac{2}{3}\right)^2 \cdot 0,2389 = 0,5 \cdot 2,25 \cdot 0,2389 = 0,27 = 27\%$$

$$P_3 = \frac{1}{3!} \cdot \left(\frac{2}{3}\right)^3 \cdot 0,2389 = 0,166 \cdot 3,375 \cdot 0,2389 = 13,4\% \quad \text{40,4\%}$$

Me'mě meř 1 letadlo - ŽADNE

$$P_0 = \frac{1}{\left(\frac{1}{0!}\right) \cdot \left(\frac{2}{3}\right)^0 + \left(\frac{1}{1!}\right) \cdot \left(\frac{2}{3}\right)^1 + \left(\frac{1}{2!}\right) \cdot \left(\frac{2}{3}\right)^2 + \left(\frac{1}{3!}\right) \cdot \left(\frac{2}{3}\right)^3}$$

$$P_0 = \frac{1}{1 + 1,5 + 1,125 + 0,56} = 23,89\%$$

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$$P_0 = \frac{1}{\frac{1}{0!} \cdot \left(\frac{12}{5}\right)^0 + \left(\frac{1}{1!}\right) \cdot \left(\frac{12}{5}\right)^1 + \left(\frac{1}{2!}\right) \cdot \left(\frac{12}{5}\right)^2 + \left(\frac{1}{3!}\right) \cdot \left(\frac{12}{5}\right)^3 + \left(\frac{1}{4!}\right) \cdot \left(\frac{12}{5}\right)^4}$$

$$P_0 = \frac{1}{1 + 2,4 + 2,88 + 2,29 + 1,39} = \frac{1}{9,96} = 10\%$$

$$P_4 = \frac{1}{4!} \cdot \left(\frac{12}{5}\right)^4 \cdot 0,1 = 0,042 \cdot 33,18 \cdot 0,1 = 13,94\%$$

$$ES = \frac{12}{5} = 2,4$$

$$EK = 2,4 + EL = 2,4 + 0,51 = 2,91$$

$$EL = 1 \cdot P_3 + 2 \cdot P_4 = 1 \cdot 0,229 + 2 \cdot 0,1394 = 0,51$$

$$P_3 = \frac{1}{3!} \cdot \left(\frac{12}{5}\right)^3 \cdot 0,1 = 0,166 \cdot 13,824 \cdot 0,1 = 22,9\%$$

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nevinn jak ma to

$$a) 1 - (P_0 + P_1 + P_2 + P_3)$$

$$1 - 0,23 - 0,575 = 0,195 = 19,5\%$$

$$b) P_0 = \frac{1}{\frac{1}{0!} \left(\frac{60}{40}\right)^0 + \frac{1}{2!} \left(\frac{60}{40}\right)^2 \cdot \frac{0,75}{1-0,75}} = \frac{1}{1 + (45 \cdot 2,25 \cdot 3)}$$

$$P_0 = \frac{1}{4,375} = 0,23 = 23\%$$

$$P_1 = \frac{1}{k!} \cdot \left(\frac{\lambda}{\mu}\right)^k \cdot P_0 = \frac{1}{1!} \cdot \frac{60}{40} \cdot 0,23 = 34,5\%$$

$$P_0 + P_1 = 57,5\%$$