Guten Morgen eA 27.4.19

$$1 = y \cdot \frac{1}{6} + y \cdot 2 \cdot \frac{1}{9} + y \cdot 5 \cdot \frac{1}{243}$$

y = Auszahlungsbetrag

$$y = \frac{486}{199}\,€ \approx 2{,}44\,€$$

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c) $P(30 \leq x \leq 50) \approx P(x \leq 50) - P(x \leq 29)$

$$= 0{,}8085$$

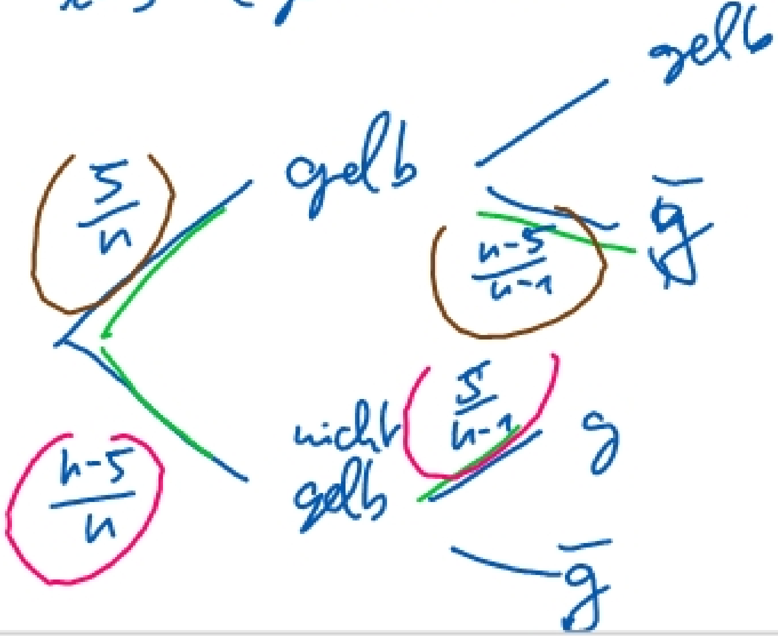
$$1 - 19 \cdot \frac{349}{486} \cdot \left(\frac{137}{486}\right)^{18} = \underbrace{1 - P(X=1)}$$

X: Anzahl der verlorenen Spiele

<u>nicht</u> genau 1 Spiele verloren.

d) n = Anzahl aller Kugeln

$x = 5$ (gelbe Kugeln)



$$\frac{1}{3} = \frac{n}{5} \cdot \frac{n-5}{n-1} + \frac{n-5}{n} \cdot \frac{5}{n-1}$$

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a) $P(x>4) \approx 0{,}091 - \quad 9{,}1\%$

$P(x<4{,}2) =$
$P(x \leq 4{,}2)$

$P(3{,}2-1 \leq x \leq 3{,}2+1) \approx 0{,}9044$
$= 90{,}44\%$

$2{,}4602$

$P(a \leq x \leq 4) = 0{,}8 \qquad a \approx \ldots$

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b) $\bar{x} = 3{,}004 \qquad \bar{x} = \frac{1}{n} \sum_{i=1}^{n} x_i$

$\bar{x} = \frac{1}{10} \sum_{i=1}^{10} x_i$

$\sigma = \sqrt{\frac{1}{n-1} \cdot \sum_{i=1}^{n} (x_i - \bar{x})^2} \qquad \sigma = 0{,}4276$

$\cancel{P(0{,}1 \leq x \leq 4)}$

$y_1 = \text{invNorm } 0{,}8,\ 3,\ x$

$y_2 = 3{,}5$

"x" $\sigma = 0{,}59\,41$

$y_1 = \text{normalcdf}$

$y_2 = 0{,}8$

$P(x < 3{,}5) = 0{,}8$ $\qquad \mu_y = 3{,}0$

$$\boxed{\text{Formelsamlg: } \quad P(x \le x) = \phi\left(\frac{x-\mu}{\sigma}\right)}$$

$$\phi\left(\frac{3{,}5-3{,}0}{\sigma}\right) = 0{,}8 \quad \Big|\ \phi^{-1}$$

invNorm

$$\frac{0{,}5}{\sigma} = 0{,}85$$

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c)