

2.6 De productregel.

Opgave 61:

- a. 3 van de 4 kinkers zijn rood
- b. $\frac{2}{3}$
- c. $4 \cdot 3 = 12$; 6 keer rr
- d. $\frac{6}{12}$
- e. $\frac{3}{4} \cdot \frac{2}{3} = \frac{6}{12}$

Opgave 62:

- a. $\frac{5}{10} \cdot \frac{2}{5} = \frac{10}{50}$
- b. $\frac{2}{10} \cdot \frac{2}{5} = \frac{4}{50}$
- c. $\frac{5}{10} \cdot \frac{1}{5} = \frac{5}{50}$
- d. $\frac{7}{10} \cdot \frac{3}{5} = \frac{21}{50}$
- e. $\frac{8}{10} \cdot 1 = \frac{8}{10}$

Opgave 63:

- a. $\frac{2}{4} \cdot \frac{1}{3} \cdot \frac{1}{2} = \frac{2}{24}$
- b. $\frac{3}{4} \cdot \frac{2}{3} \cdot \frac{1}{2} = \frac{6}{24}$
- c. cbb of bcb dus $\frac{1}{4} \cdot \frac{1}{3} \cdot \frac{1}{2} + \frac{2}{4} \cdot \frac{1}{3} \cdot \frac{1}{2} = \frac{3}{24}$
- d. 0

Opgave 64:

- a. $\left(\frac{4}{6}\right)^3 = \frac{64}{216}$
- b. $\left(\frac{5}{6}\right)^3 = \frac{125}{216}$
- c. $\left(\frac{2}{6}\right)^3 = \frac{8}{216}$

Opgave 65:

- a. $\left(\frac{3}{4}\right)^4 = 0,3164$
- b. $\left(\frac{2}{4}\right)^4 = 0,0625$
- c. $P(4 \text{ keer } 1) = \left(\frac{1}{4}\right)^4 = 0,0039$

Opgave 66:

- a. empirisch
- b. $0,6 \cdot 0,5 \cdot 0,8 = 0,24$
- c. $0,4 \cdot 0,2 \cdot 0,2 = 0,016$
- d. $P(\text{soep, vis, ijs}) = 0,6 \cdot 0,3 \cdot 0,8 = 0,144$ dus $0,144 \cdot 500 = 72$

Opgave 67:

- a. $0,4^2 = 0,16$
- b. $0,7 \cdot 0,2 = 0,14$
- c. $0,7 \cdot 0,7 = 0,49$
- d. $0,35 \cdot 0,12 = 0,042$

Opgave 68:

- a. $\frac{2}{4} \cdot \frac{1}{3} = \frac{2}{12}$
 b. $\frac{3}{4} \cdot \frac{2}{3} = \frac{6}{12}$
 c. $\frac{2}{4} \cdot \frac{2}{3} + \frac{2}{4} \cdot \frac{1}{3} = \frac{6}{12}$
 d. 2-2 of 3-1 dus $\frac{1}{4} \cdot \frac{1}{3} + \frac{2}{4} \cdot \frac{1}{3} = \frac{3}{12}$
 e. $P(\text{minstens 1 keer 3}) = 1 - P(\text{geen 3}) = 1 - \frac{2}{4} \cdot \frac{2}{3} = \frac{8}{12}$

Opgave 69:

- a. ww b of wb w of bw w dus $\frac{2}{5} \cdot \frac{2}{6} \cdot \frac{3}{4} + \frac{2}{5} \cdot \frac{4}{6} \cdot \frac{1}{4} + \frac{3}{5} \cdot \frac{2}{6} \cdot \frac{1}{4} = \frac{26}{120} = 0,217$
 b. $\frac{2}{5} \cdot \frac{2}{6} \cdot \frac{1}{4} = \frac{4}{120} = 0,033$
 c. $P(\text{minstens 1 wit}) = 1 - P(\text{geen wit}) = 1 - \frac{3}{5} \cdot \frac{4}{6} \cdot \frac{3}{4} = \frac{84}{120} = 0,7$
 d. bbb of wbb of bw b of bbw
 $\frac{3}{5} \cdot \frac{4}{6} \cdot \frac{3}{4} + \frac{2}{5} \cdot \frac{4}{6} \cdot \frac{3}{4} + \frac{3}{5} \cdot \frac{2}{6} \cdot \frac{3}{4} + \frac{3}{5} \cdot \frac{4}{6} \cdot \frac{1}{4} = \frac{90}{120} = 0,75$

Opgave 70:

- a. $\frac{3}{8} \cdot \frac{1}{8} \cdot \frac{2}{8} = \frac{6}{512} = 0,0117$
 b. $\frac{2}{8} \cdot \frac{6}{8} \cdot \frac{2}{8} + \frac{2}{8} \cdot \frac{1}{8} \cdot \frac{3}{8} + \frac{2}{8} \cdot \frac{6}{8} \cdot \frac{3}{8} = \frac{66}{512} = 0,1289$
 c. $\frac{7}{8} \cdot \frac{8}{8} \cdot \frac{7}{8} = \frac{392}{512} = 0,7656$
 d. $\frac{1}{8} \cdot \frac{8}{8} \cdot \frac{7}{8} + \frac{7}{8} \cdot \frac{8}{8} \cdot \frac{1}{8} = \frac{112}{512} = 0,2188$
 e. $P(\text{minstens 1 peer}) = 1 - P(\text{geen peer}) = 1 - \frac{5}{8} \cdot \frac{7}{8} \cdot \frac{6}{8} = 1 - \frac{210}{512} = \frac{302}{512} = 0,5898$

Opgave 71:

- a. $0,4 \cdot 0,25 = 0,1$
 b. $0,42 \cdot 0,6 \cdot 0,4 \cdot 0,75 = 0,0756$
 c. $P(\text{wordt niet 3 jaar}) = 1 - P(\text{wordt wel 3 jaar}) = 1 - 0,42 \cdot 0,6 \cdot 0,4 = 0,8992$