

$$d. \frac{49 + 51 + 12 + 15}{215} = 0,591$$

Opgave 5:

$$0,15 \cdot 0,03 = 0,0045$$

Opgave 6:

$$a. \frac{\binom{5}{2} \cdot \binom{7}{2} \cdot \binom{9}{2}}{\binom{21}{6}} = 0,139$$

$$b. \frac{\binom{12}{6}}{\binom{21}{6}} = 0,017$$

$$c. \frac{\binom{5}{2} \cdot \binom{16}{4}}{\binom{21}{6}} = 0,335$$

Opgave 7:

$$a. \frac{\binom{33}{4}}{\binom{40}{4}} = 0,4478$$

$$b. \frac{\binom{7}{2} \cdot \binom{33}{2}}{\binom{40}{4}} = 0,1213$$

$$c. \frac{\binom{1}{1} \cdot \binom{6}{1} \cdot \binom{33}{2}}{\binom{40}{4}} = 0,0347$$

Opgave 8:

$$a. P(\text{minstens 1 rood}) = 1 - P(\text{geen rood}) = 1 - \frac{\binom{8}{4}}{\binom{14}{4}} = 0,930$$

$$b. \frac{\binom{9}{4} + \binom{9}{3} \cdot \binom{5}{1}}{\binom{14}{4}} = 0,545$$

$$c. \frac{\binom{8}{4}}{\binom{14}{4}} = 0,070$$

$$d. P(\text{minder dan 3 zwart}) = 1 - P(3 \text{ zwart}) = 1 - \frac{\binom{3}{3} \cdot \binom{11}{1}}{\binom{14}{4}} = 0,989$$

Opgave 9:

$$a. \frac{\binom{115}{6} + \binom{115}{5} \cdot \binom{5}{1}}{\binom{120}{6}} = 0,980$$

- b. 1 keer 100 of 4 keer 25

$$\frac{\binom{1}{1} \cdot \binom{115}{5} + \binom{4}{4} \cdot \binom{115}{2}}{\binom{120}{6}} = 0,042$$

- c. minimaal 30 euro aan prijzengeld winnen

$$P(\text{geen verlies}) = 1 - P(0 \text{ of } 25 \text{ euro}) = 1 - \frac{\binom{115}{6} + \binom{115}{5} \cdot \binom{4}{1}}{\binom{120}{6}} = 0,062$$

Opgave 10:

a. $\left(\frac{2}{6}\right)^4 = \frac{16}{1296} = \frac{1}{81}$

b. $\left(\frac{5}{6}\right)^4 = \frac{625}{1296}$

c. $P(\text{minstens 1 keer meer dan 2 ogen}) = 1 - P(\text{met iedere dobbelsteen 1 of 2})$
 $= 1 - \left(\frac{2}{6}\right)^4 = 1 - \frac{16}{1296} = \frac{1280}{1296} = \frac{80}{81}$

Opgave 11:

a. $\frac{2}{5} \cdot \frac{1}{4} \cdot \frac{1}{3} = \frac{2}{60}$

b. $\frac{2}{5} \cdot \frac{3}{4} \cdot \frac{2}{3} + \frac{3}{5} \cdot \frac{1}{4} \cdot \frac{2}{3} + \frac{3}{5} \cdot \frac{3}{4} \cdot \frac{1}{3} = \frac{27}{60}$

c. $\frac{1}{5} \cdot \frac{2}{4} \cdot \frac{2}{3} + \frac{1}{5} \cdot \frac{2}{4} \cdot \frac{1}{3} + \frac{4}{5} \cdot \frac{2}{4} \cdot \frac{1}{3} + \frac{1}{5} \cdot \frac{2}{4} \cdot \frac{1}{3} = \frac{16}{60}$

d. $\frac{2}{5} \cdot \frac{1}{4} \cdot \frac{1}{3} + \frac{2}{5} \cdot \frac{1}{4} \cdot \frac{1}{3} + \frac{1}{5} \cdot \frac{2}{4} \cdot \frac{1}{3} = \frac{6}{60}$

e. $\frac{3}{5} \cdot \frac{3}{4} \cdot \frac{2}{3} + \frac{2}{5} \cdot \frac{3}{4} \cdot \frac{2}{3} + \frac{3}{5} \cdot \frac{1}{4} \cdot \frac{2}{3} + \frac{3}{5} \cdot \frac{3}{4} \cdot \frac{1}{3} = \frac{45}{60}$

Opgave 12:

a. $0,83 \cdot 0,66 \cdot 0,41 = 0,225$

b. $0,83 \cdot 0,66 \cdot 0,59 = 0,323$

c. $0,83 \cdot 0,66 \cdot 0,41 \cdot 0,12 = 0,027$

d. $P(\text{minder dan 4 maanden oud}) = 1 - P(\text{minstens 4 maanden}) = 1 - 0,027 = 0,973$