1a) mind. 1+2, höchstens 19+20 ⇒ 37 verschd. Summenwerte

b) je näher die Summe an 20, desto mehr verschd. Summanden sind möglich.

c) $A_{10} = \{(119); (911); (218); (812); (317); (713); (416); (614)\}$

$|A_{10}| = 8$ $\quad |\Omega| = 20 \cdot 19 = 380$ $\quad P(A_{10}) = \frac{8}{380} \approx 2{,}1\,\%$

2a) $P(2\times \text{Gesd.}) = \frac{100}{500} \cdot \frac{100}{500} = \frac{1}{25} = 4\,\%$

3. $|\Omega| = 10^3 = 1000$

$|A| = 10 \cdot 1 \cdot 10 = 100$ $\quad P(A) = \frac{100}{1000} = 10\,\%$

$|B| = 10 \cdot 9 \cdot 8 = 720$ $\quad P(B) = \frac{720}{1000} = 72\,\%$

$|C| = \frac{|B|}{3!} = 120$ $\quad P(C) = \frac{120}{1000} = 12\,\%$

4a) $\underset{3}{♂}\ \underbrace{\_\_\_\_\_}_{5!}\ \underset{2}{♂} = 720$

b) $\underset{4}{♀}\ \underset{3}{♂}\ \underset{3}{♀}\ \underset{2}{♂}\ \underset{2}{♀}\ \underset{1}{♂}\ \underset{1}{♀} = 144$

5b) $A\ \underset{8\cdot7\cdot6\cdot5\cdot4}{\_\_\_\_\_} \cdot B\ \underset{10\cdot9\cdot8\cdot7\cdot6\cdot5\cdot4}{\_\_\_\_\_\_\_} = 1\,016\,064\,000$

6b) $\underset{2}{♂}\ \underbrace{♀\ ♀\ ♀\ ♀\ \cdots\ \_\_\_}_{9!}\ \underset{1}{♂} = 725\,760$

7. $|\Omega| = 4 \cdot 6 = 24$

$|A| = 1 \cdot 6$ $\quad |B| = 4 \cdot 1$

$|C| = 3 \cdot 5$ $\quad |D| = |\Omega| - 1 = 23$

$P(C) = \frac{15}{24} = 62{,}5\,\%$ $\quad P(D) = \frac{23}{24} \approx 95{,}8\,\%$

8a) $|\text{Gewinn}| = \underset{4\ 4}{1 \cdot 5} + \underset{4\ 4}{3 \cdot 1} = 8$

$P(\text{Gewinn}) = \frac{8}{24} = \frac{1}{3}$