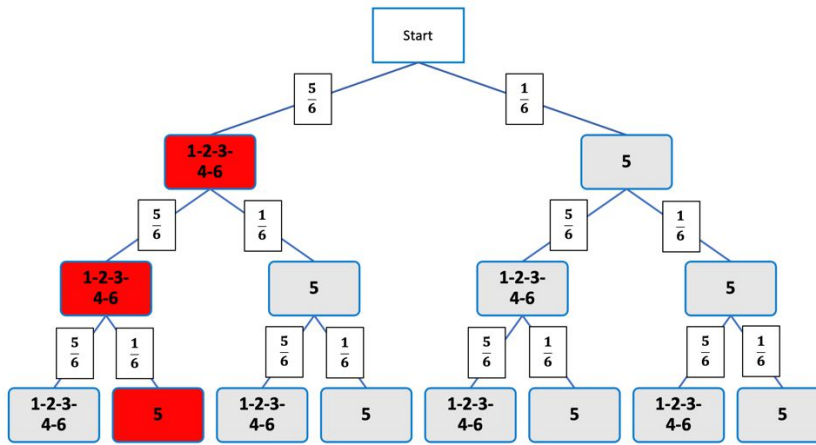


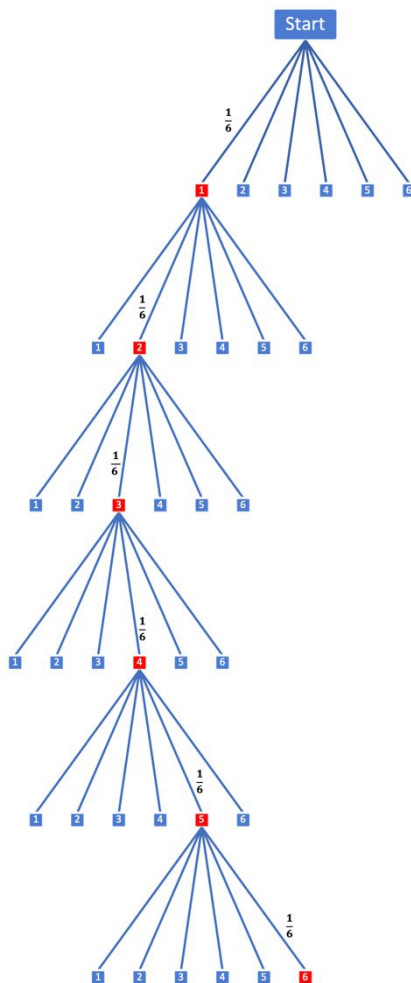
Lösungen Arbeitsblatt 'Wahrscheinlichkeit'

1. a.)



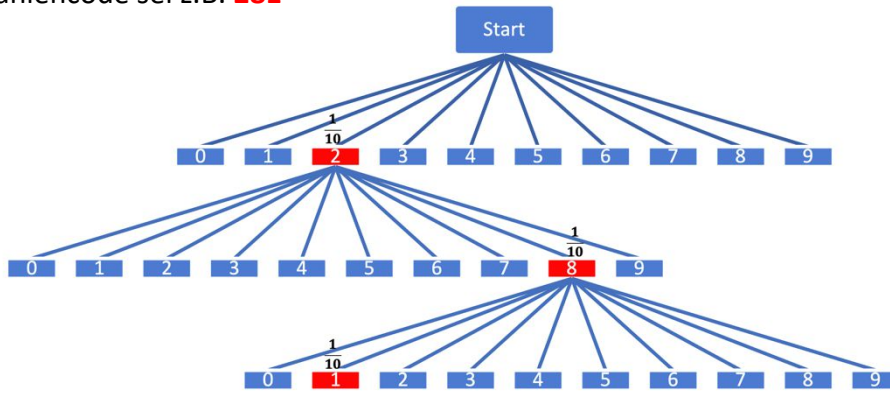
$$W = \frac{5}{6} \cdot \frac{5}{6} \cdot \frac{1}{6} = \frac{25}{216}$$

b.)



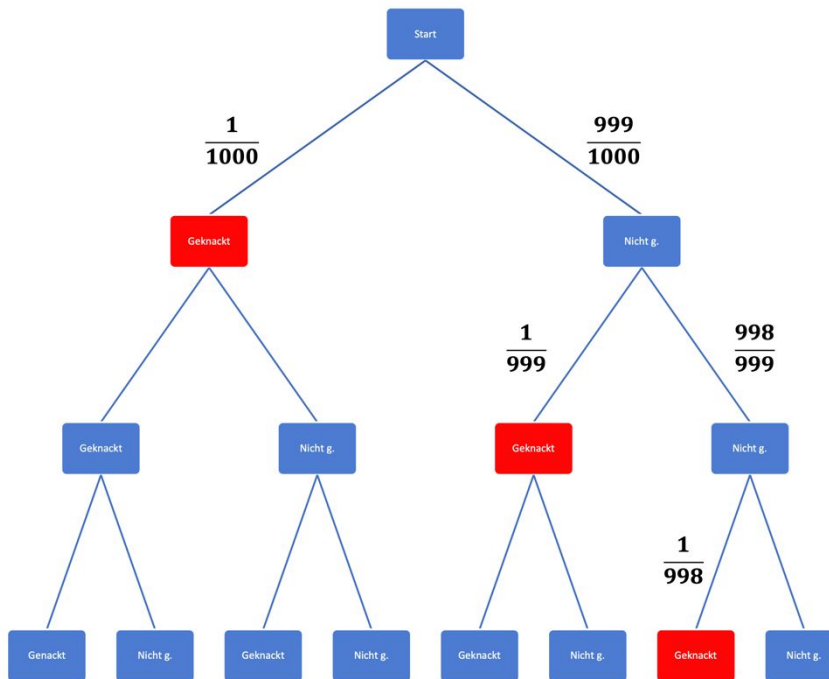
$$W = \frac{1}{6} \cdot \frac{1}{6} \cdot \frac{1}{6} \cdot \frac{1}{6} \cdot \frac{1}{6} \cdot \frac{1}{6} = \frac{1}{46656}$$

2. a.) Zahlencode sei z.B. **281**



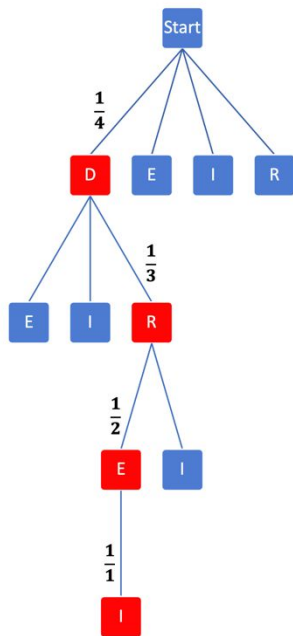
$$W = \frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10} = \frac{1}{1000}$$

b.)



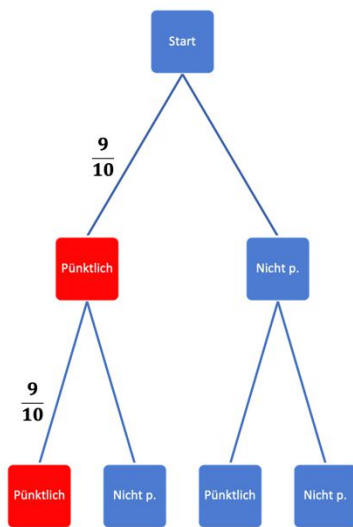
$$W = \frac{1}{1000} + \frac{999}{1000} \cdot \frac{1}{999} + \frac{999}{1000} \cdot \frac{998}{999} \cdot \frac{1}{998} = \frac{1}{1000} + \frac{1}{1000} + \frac{1}{1000} = \frac{3}{1000}$$

3.



$$W = \frac{1}{4} \cdot \frac{1}{3} \cdot \frac{1}{2} \cdot \frac{1}{1} = \frac{1}{24}$$

4.

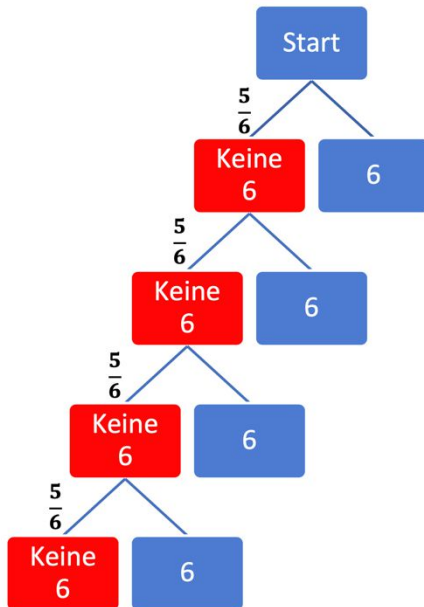


$$W = \frac{9}{10} \cdot \frac{9}{10} = \frac{81}{100}$$

5.

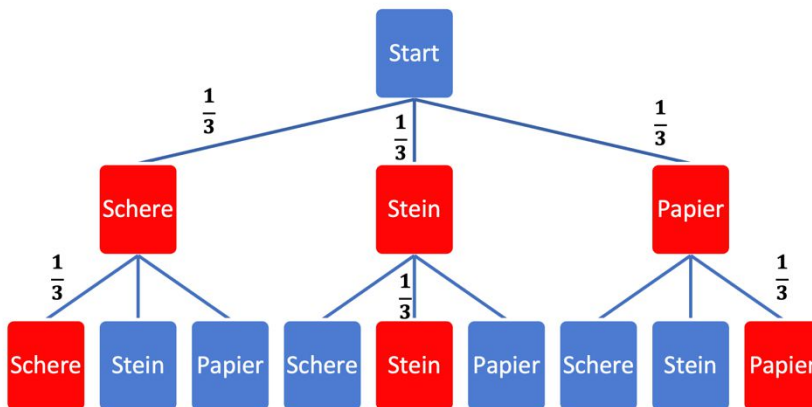
Trick:

- Man berechnet zuerst die Wahrscheinlichkeit des Gegenereignisses (man würfelt bei vier Würfeln nie eine 6).
- Diese Wahrscheinlichkeit wird von 100% (= **1**) subtrahiert.



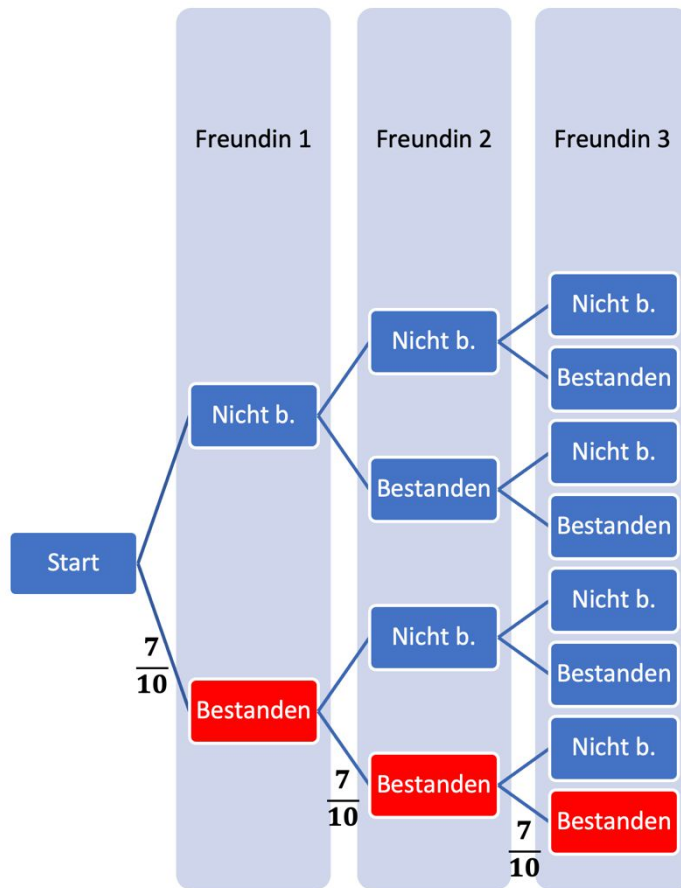
$$w = 1 - \frac{5}{6} \cdot \frac{5}{6} \cdot \frac{5}{6} \cdot \frac{5}{6} = 1 - \frac{625}{1296} = \frac{671}{1296}$$

6.



$$w = \frac{1}{3} \cdot \frac{1}{3} + \frac{1}{3} \cdot \frac{1}{3} + \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{9} + \frac{1}{9} + \frac{1}{9} = \frac{3}{9} = \frac{1}{3}$$

7.



$$w = \frac{7}{10} \cdot \frac{7}{10} \cdot \frac{7}{10} = \frac{343}{1000}$$