Lösungen Testat STOC SW03

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Inhaltsverzeichnis

1 Aufgabe 1

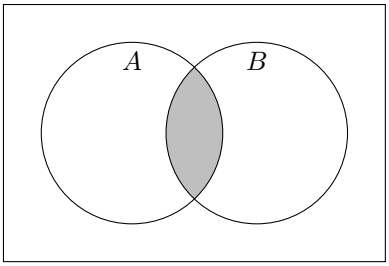
1.1 a

1.2 b

2 Aufgabe 2

2.1 a

$$P(A \cap B) = P(A) \cdot P(B) = \frac{3}{4} \cdot \frac{2}{3} = \frac{1}{2}$$

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\begin{venndiagram2sets}
  \fillACapB
\end{venndiagram2sets}
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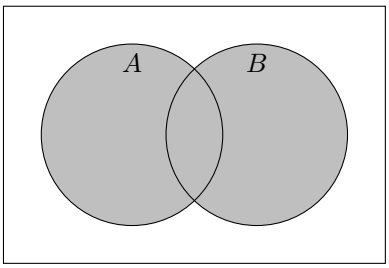
2.2 b

$$P(A \cup B) = P(A) + P(B) - P(A \cap B) = \frac{3}{4} + \frac{2}{3} - \frac{2}{4} = \frac{11}{12}$$

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\begin{venndiagram2sets}
  \fillA \fillB
\end{venndiagram2sets}
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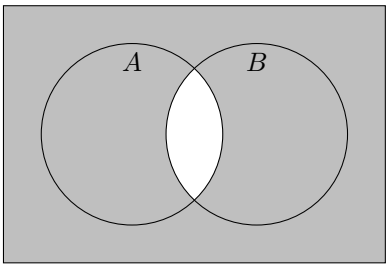
2.3 c

$$P(\overline{A \cap B}) = P(\Omega) - P(A \cap B) = 1 - P(A \cap B) = 1 - \frac{1}{2} = \frac{1}{2}$$

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\begin{venndiagram2sets}
  \fillNotAorB \fillANotB \fillBNotA
\end{venndiagram2sets}
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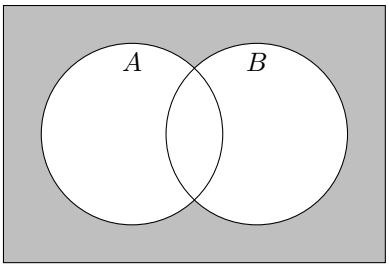
2.4 d

$$P(\overline{A \cup B}) = P(\Omega) - P(A \cup B) = 1 - P(A \cup B) = 1 - \frac{11}{12} = \frac{1}{12}$$

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\begin{venndiagram2sets}
  \fillNotAorB
\end{venndiagram2sets}
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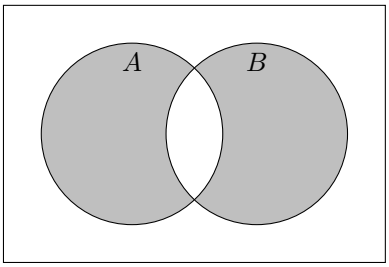
2.5 e

$$P(A \cup B) = P(A) + P(B) - 2 \cdot P(A \cap B) = \frac{3}{4} + \frac{2}{3} - 2 \cdot \frac{2}{4} = \frac{5}{12}$$



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\begin{venndiagram2sets}
  \fillANotB \fillBNotA
\end{venndiagram2sets}
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3 Aufgabe 3

3.1 a

3.2 b

4 Aufgabe 4

4.1 a

$\{11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 31, 32, 33, 34, 35, 36,$
$41, 42, 43, 44, 45, 46, 51, 52, 53, 54, 55, 56, 61, 62, 63, 64, 65, 66\}$

4.2 b

$\frac{1}{36}$

4.3 c

$E_1 = \{16, 25, 34, 43, 52, 61\}$

$P(E_1) = \frac{6}{36} = \frac{1}{6}$

4.4 d

$E_2 = \{11, 12, 21\}$

$P(E_2) = \frac{3}{36} = \frac{1}{12}$

4.5 e

$E_3 = \{11, 13, 15, 31, 33, 35, 51, 53, 55\}$

$P(E_3) = \frac{9}{36} = \frac{1}{4}$

4.6 f

$E_2 \cup E_3 = \{11, 12, 13, 15, 21, 31, 33, 35, 51, 53, 55\}$

$P(E_3) = \frac{11}{36}$

5 Aufgabe 5

5.1 a

5.2 b

5.3 c

6 Aufgabe 6

6.1 a

6.2 b

6.3 c