

Pr 1/st 18

a, $\frac{3}{6} = 50\%$

b, $\frac{3}{6} = 50\%$

c, $\frac{0}{6} = 0\%$

d, 3, 4, 5, 6 $\rightarrow \frac{4}{6} = 66,6\bar{6}$

Pr 3/st 19

3

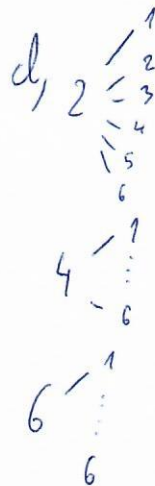
Různej kocky

Rovnaké kocky

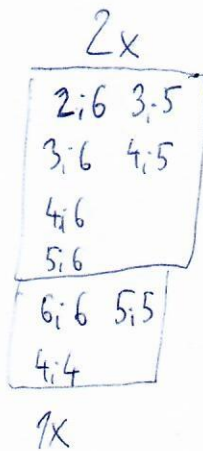
a, $6+4=10$
 $5+5=10$

$6:4$
 $4:6 \rightarrow \frac{3}{36}$
 $5:5$

$6:4$
 $5:5 \rightarrow \frac{2}{36}$



b,
 $2+6=8$ $3+5=8$
 $3+6=9$ $4+5=9$
 $4+6=10$ $5+5=10$
 $5+6=11$ $4+4=8$
 $6+6=12$



$\rightarrow \frac{15}{36}$

$2:6$ $3:5$
 $3:6$ $4:5$
 $4:6$ $5:5 \rightarrow \frac{9}{36}$
 $5:6$ $4:4$
 $6:6$

	1	2	3	4	5	6
1	.	✓	.	✓	✓	✓
2	✓	✓	✓	✓	✓	✓
3	.	✓	.	✓	✓	✓
4	✓	✓	✓	✓	✓	✓
5	.	✓	.	✓	✓	✓
6	✓	✓	✓	✓	✓	✓

$\rightarrow \frac{27}{36}$

c,
 $1:1$
 $2:2 \rightarrow \frac{6}{36}$
 $3:3$
 $4:4$
 $5:5$
 $6:6$

$1:1$
 $2:2$
 $3:3$
 $4:4 \rightarrow \frac{6}{36}$
 $5:5$
 $6:6$

Pr 4/ St 19

4, a, $4+6=10$
 $5+5=10$
 $6+4=10$
 $\rightarrow \frac{3}{36} = \frac{1}{12}$

b, $5+6=11$
 $6+5=11$
 $6+6=12$
 $\rightarrow \frac{3}{36} = \frac{1}{12}$

c, $2 \begin{matrix} 1 \\ 2 \\ 6 \end{matrix}$ $1 \begin{matrix} 2 \\ 4 \\ 6 \end{matrix}$
 $4 \begin{matrix} 1 \\ 2 \\ 6 \end{matrix}$ $3 \begin{matrix} 2 \\ 4 \\ 6 \end{matrix}$
 $6 \begin{matrix} 1 \\ 2 \\ 6 \end{matrix}$ $5 \begin{matrix} 2 \\ 4 \\ 6 \end{matrix}$
 $3 \cdot 6 + 3 \cdot 3 = 27$
 $\rightarrow \frac{27}{36}$

d, $1 \begin{matrix} 2 \\ 4 \\ 6 \end{matrix}$
 $3 \begin{matrix} 2 \\ 4 \\ 6 \end{matrix} \times 2$
 $5 \begin{matrix} 2 \\ 4 \\ 6 \end{matrix}$
 $3 \cdot 3 \cdot 2 = 18$
 $\rightarrow \frac{18}{36}$

e, $4 \begin{matrix} 1 \\ 6 \end{matrix}$ $1 \begin{matrix} 4 \\ 6 \end{matrix}$
 $1 - \frac{12}{36} = \frac{24}{36}$
 $6 + 6 = 12$
 $f, 66 - 1$ $1 - \frac{1}{36} = \frac{35}{36}$

Pr 5/ St 19

5.

a, $1 - (\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2}) = \frac{7}{8}$

b, $\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8}$

c, $\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8}$

d, 0

e, $\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8}$

Pr 10/St 20

10 $(5 \cdot 4) = 20 - \text{ns. moz.}$

a)

$$1 \begin{array}{l} 2 \\ -4 \end{array}$$

$$2 \begin{array}{l} 4 \\ -2 \\ 3 \end{array}$$

$$4 \begin{array}{l} 2 \\ -2 \end{array}$$

$$5 \begin{array}{l} 2 \\ -4 \end{array}$$

$$\rightarrow 3 \cdot 2 + 2 \cdot 1 = 8 \quad \frac{8}{20}$$

$$b, \frac{2}{5} \cdot \frac{2}{5} = \frac{4}{25}$$

$$1 \begin{array}{l} 2 \\ \vdots \\ 5 \end{array}$$

$$3 \begin{array}{l} 1 \\ 2 \\ 4 \\ 5 \end{array}$$

$$5 \begin{array}{l} 1 \\ \vdots \\ 4 \end{array}$$

$$\rightarrow 3 \cdot 4 = 12 \quad \frac{12}{20}$$

Pr 11/St 21

M. 4-farby

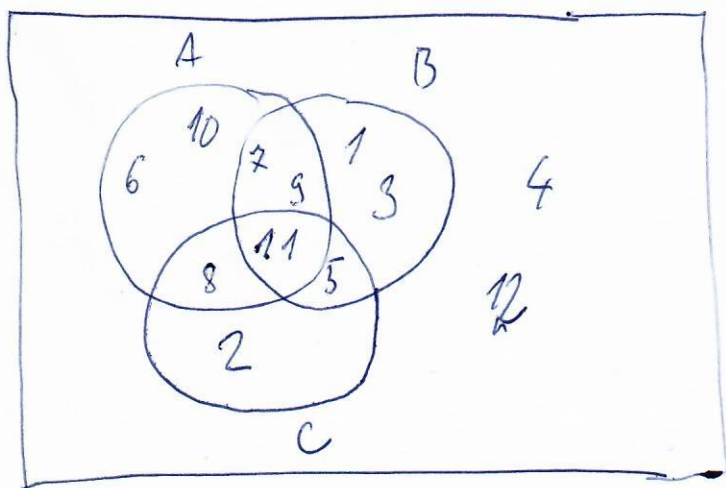
a, $\frac{1}{4}$

b, $\frac{4}{32} \cdot \frac{4}{32} = \frac{1}{64}$

c, $\frac{4}{32} \cdot \frac{4}{32} = \frac{1}{64}$

Pr 12/St 21

12.



f, $\frac{10}{12} A \cup B \cup C$

c, $\frac{1}{12} A \cap B \cap C$

Pr 13/ St 21

13.

$$b, 1 - \left(\frac{28}{32} \cdot \frac{27}{31} \cdot \frac{26}{30} \right) = \frac{421}{1240}$$

$$c, \frac{4}{32} \cdot \frac{4}{31} = \frac{1}{62}$$

Pr 14/ St 21

14

$$a, \frac{\binom{2}{2} \binom{3}{1} \binom{5}{1}}{\binom{15}{4}}$$

$$b, \frac{\binom{7}{2} \binom{5}{1} \binom{3}{6}}{\binom{15}{4}}$$

$$c, \frac{\binom{7}{0} \binom{5}{1} \binom{3}{3}}{\binom{15}{4}} + \frac{\binom{7}{6} \binom{5}{2} \binom{3}{2}}{\binom{15}{4}} + \left\{ \frac{\binom{7}{5} \binom{5}{3} \binom{3}{1}}{\binom{15}{4}} + \frac{\binom{7}{6} \binom{5}{4} \binom{3}{0}}{\binom{15}{4}} \right\}$$

Pr 15/ St 22

15

$$a, \frac{\binom{21}{2} \binom{4}{1}}{\binom{30}{3}} + \frac{\binom{21}{1} \binom{4}{2}}{\binom{30}{3}}$$

$$b, \frac{\binom{9}{3}}{\binom{30}{3}}$$

Pr 17/ St 22

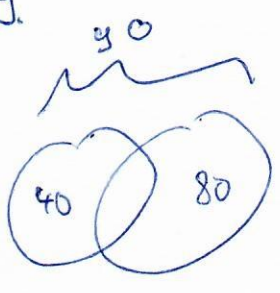
$$17. \quad a, \frac{\binom{32}{4}}{\binom{40}{4}}$$

$$b, \frac{\binom{32}{3} \binom{8}{1}}{\binom{40}{4}}$$

$$c, \frac{\binom{32}{4}}{\binom{40}{4}} + \frac{\binom{32}{3} \binom{8}{1}}{\binom{40}{4}} + \frac{\binom{32}{2} \binom{8}{2}}{\binom{40}{4}}$$

Pr 19/St 22

19.



$$40 + 80 - 30 = x$$

$$x = \underline{90}$$

Pr 22/St 22

22.

$$\frac{\binom{5}{2} \binom{5}{4}}{\binom{10}{6}}$$

$$\frac{\binom{5}{2} \binom{5}{4}}{\binom{10}{6}} = \frac{\frac{5!}{2!3!} \cdot \frac{5!}{4!1!}}{\frac{10!}{6!4!}} = \frac{10 \cdot 5 \cdot 5}{10 \cdot 9 \cdot 5} = \frac{5}{9}$$

$$\frac{\binom{5}{2} \binom{5}{4}}{\binom{10}{6}} = \frac{10 \cdot 5}{9 \cdot 5} = \frac{10}{9}$$

$$\frac{\binom{6}{5} \binom{5}{3}}{\binom{10}{8}} + \frac{\binom{6}{4} \binom{5}{2}}{\binom{10}{8}} + \frac{\binom{6}{3} \binom{5}{1}}{\binom{10}{8}}$$

$$\frac{\binom{6}{2} \binom{5}{2}}{\binom{10}{4}}$$

$$\frac{\binom{5}{2} \binom{5}{2}}{\binom{10}{4}}$$

Pr 28 / St 24

28

$$a, \frac{2}{3}$$

$$b, \frac{1}{3}$$

$$c, \frac{1}{3}$$

Pr 29 / St 24

29

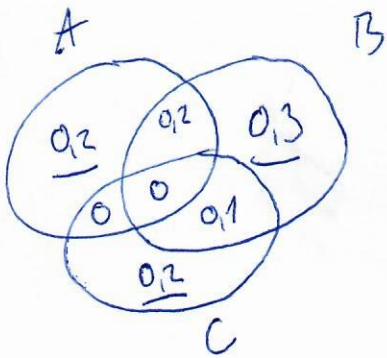
$$a, \frac{16}{50}$$

$$b, \frac{31}{50}$$

$$c, \frac{31}{50}$$

Pr 30 / St 24

30.



$$a, A' = 0.6$$

$$b, (A \cup B) = 0.8$$

$$c, (B' \cup C') = 0.6$$

$$d, (A \cap B) \cup (A \cap C) = 0.2$$

$$e, (B \cup C) = 0.8$$

$$f, (A \cup B \cup C) = 1$$

Pr 33/Sz 25

33.

a, ~~(0,14+0,15)~~

$$a, \frac{1}{3} \cdot 0,14 + \frac{1}{3} \cdot 0,15 + \frac{1}{3} \cdot 0,2 = 0,25$$

$$b, \frac{1}{3} \cdot 0,15 = 0,05$$

c, $P(A|B) = \frac{P(B|A) \cdot P(A)}{P(B)} = \frac{0,8 \cdot \frac{1}{3}}{1-0,25} = \frac{16}{45}$

okrah C / izlozil

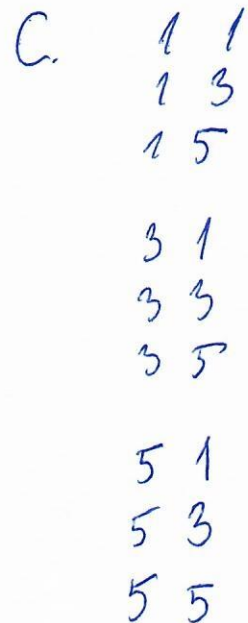
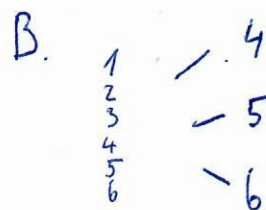
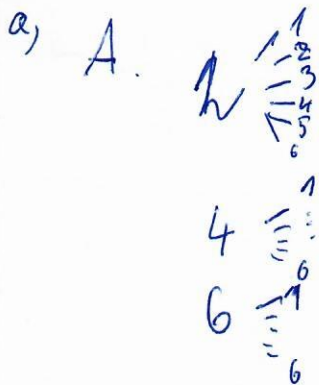
Pr 34/Sz 25

$$34. 0,2 \cdot 0,6 = 0,12 \quad 0,12 + 0,4 \text{ me no}$$



Pr 36/Sz 25

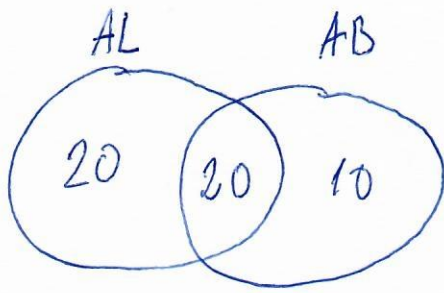
36.



b, A-B ano
 A-C nie
 B-C nie

Pr 37/St 25

37



$$\frac{20}{40} = \frac{1}{2}$$

Pr 39/St 25

39

a, $0,5 \cdot 0,9 = 0,45$

b, $0,5 \cdot 0,1 = 0,05$

c, $0,5 \cdot 0,7 \cdot 0,1 = 0,035$

P. 42/St 26

$$42. \frac{\binom{20}{4}}{\binom{50}{4}}$$

$$b, \quad \frac{30}{50} \cdot \frac{29}{49} \cdot \frac{28}{48} \cdot \frac{27}{47}$$



P. 44/St 26

44.

$$\frac{1}{2} \cdot \frac{3}{4} \cdot \frac{5}{6} \cdot \frac{7}{8}$$

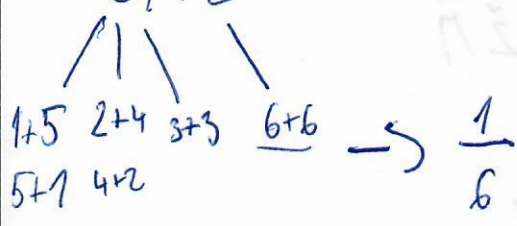
Pr 46 / St 27

46

Možné výsledky

6, 12

~~0, 3~~



Pr 48 / St 27

48

a, 0.2, 0.6, 0.4

b, 0.8, 0.4, 0.4

c, 0.8, 0.6, 0.6

Pr 49 / St 27

49.

A - manželský pár B - otvorní žena

2M

ž 3M

2ž 3M

6ž 1M

ž 1M

$$P(B) = \frac{1}{5} \cdot 0 + \frac{1}{5} \cdot \frac{1}{4} + \frac{1}{5} \cdot \frac{2}{5} + \frac{1}{5} \cdot \frac{6}{7} + \frac{1}{5} \cdot \frac{1}{2}$$

$$P(A) = \frac{1}{5} \quad P(B|A) = \frac{1}{2}$$

$$P(A|B) = \frac{P(B|A) \cdot P(A)}{P(B)}$$

Pr 50 / St 27

50.

A - dřevěná

$$P(A) = 0,4$$

B - kalhoty

$$P(B) = 0,6 + 0,4 \cdot \frac{1}{2} = 0,8$$

$$P(B|A) = 0,5$$

$$P(A|B) = \frac{P(B|A) \cdot P(A)}{P(B)} = \frac{0,5 \cdot 0,4}{0,8} = \frac{1}{4}$$

Pr 51 / St 27

51.

$$0,3 \cdot 0,9 \cdot 0,5 + 0,15 \cdot 0,5 \cdot 0,5 + 0,55 \cdot 0,75 = 0,585$$

| | | | | | |
 lhář lze řekne nálad lze řekne norm pravda
 | | | | | |
 norm norm norm norm norm norm norm

P. 53 / St 28

53.

A - pri

B - zataženo

$$P(A) = 0,1$$

$$P(B) = 0,4$$

$$P(B|A) = 0,5$$

$$P(A|B) = \frac{P(B|A) \cdot P(A)}{P(B)} = \frac{0,5 \cdot 0,1}{0,4} = \frac{1}{8}$$

P. 52 / St 28

52.

$$0,1 \cdot 0,08 = 0,008$$

$$\frac{0,008 \cdot 8}{905} = \frac{8}{50}$$