

Exame 22/2/2016

1) 7,5 punti

a) $\binom{25}{3}$

b) $3 \binom{25}{3}$

c) $\binom{25}{2} \binom{25}{1} 3 \cdot 2 = 3 \cdot 25^2 \cdot 24 = 45000$

2) D_1 prima difettoso, D_2 secondo difettoso 7 punti

$$P(D_2 | D_1) = \frac{P(D_2 D_1)}{P(D_1)} = \frac{P(D_2 D_1 | A) P(A) + P(D_2 D_1 | B) P(B)}{P(D_1 | A) P(A) + P(D_1 | B) P(B)}$$

$$= \frac{0.05^2 \cdot 1/2 + 0.01^2 \cdot 1/2}{0.05 \cdot 1/2 + 0.01 \cdot 1/2} = 13/300$$

3) 7 punti

a) $(1/4)^2 (3/4) = 3/64$

b) $(1/4)^4 = 1/256$

4) 8 punti

a) $35x - (34 - x) = 36x - 34 \geq 0 \quad x \geq 34/36 \quad x \text{ intero}$
euro vinti euro persi

$x \geq 1$

b) $P\{x \geq 1\} = P\{x > 0.5\}$ con continuità = $P\left\{ \frac{x - 34/36}{\sqrt{34 \cdot 1/36 \cdot 37/36}} > \right\}$

$\left. \frac{0.5 - 34/36}{\sqrt{34 \cdot (1/36) \cdot (37/36)}} \right\} = P\{z > -0.4229\} = \Phi(0.4229) \approx 0.6638$