ESERCIZI VARIABILI ALEATORIE

Nel lancio di due dadi, sia **D** la *differenza* (in valore assoluto) dei due esiti: **D((1,3)) = D((3,1)) = 2, D((4,4)) = 0**, ecc.
Calcolare la *funzione di probabilità* di **D**.

$S_D = \{0,1,2,3,4,5\}$, SPAZIO EQUIPROBABILE, $|\Omega| = 36$

$$p_D(0) = P(D=0) = P(\omega \in \Omega : D(\omega) = 0) = P(\{(1,1),(2,2),\dots(6,6)\}) = \frac{6}{36} = \boxed{\frac{1}{6}}.$$

$$p_D(1) = P(D=1) = P(\omega \in \Omega : D(\omega) = 1) = P(\{(1,2),(2,3),(3,4),(4,5),(5,6),(2,1),(3,2),(4,3),(5,4),(6,5)\}) = \frac{10}{36} = \boxed{\frac{5}{18}}.$$

$$p_D(2) = P(D=2) = P(\omega \in \Omega : D(\omega) = 2) = P(\{(1,3),(2,4),(3,5),(4,6),(3,1),(4,2),(5,3),(6,4)\}) = \frac{8}{36} = \boxed{\frac{2}{9}}.$$

$$p_D(3) = P(D=3) = P(\omega \in \Omega : D(\omega) = 3) = P(\{(1,4),(2,5),(3,6),(4,1),(5,2),(6,3)\}) = \frac{6}{36} = \boxed{\frac{1}{6}}.$$

$$p_D(4) = P(D=4) = P(\omega \in \Omega : D(\omega) = 4) = P(\{(1,5),(2,6),(5,1),(6,2)\}) = \frac{4}{36} = \boxed{\frac{1}{9}}.$$

$$p_D(5) = P(D=5) = P(\omega \in \Omega : D(\omega) = 5) = P(\{(1,6),(6,1)\}) = \frac{2}{36} = \boxed{\frac{1}{18}}.$$

d	0	1	2	3	4	5
p_D	1/6	5/18	2/9	1/6	1/9	1/18