







**Enunciados**

- ① Se lanzan dos monedas indistinguibles y se dice cuántas caras han salido. Calcula la probabilidad de que se obtenga exactamente una cara.
- ② Se lanzan dos dados indistinguibles de seis caras (hexaedros) rotuladas con puntos de 1 a 6 (es decir:      ) y se dice la suma de los puntos de las dos caras superiores. Calcula con dos cifras significativas la probabilidad de que la suma sea mayor o igual a 9.

**Resoluciones**

- ① El espacio muestral es  $E = \{0, 1, 2\}$ , que no es equiprobable y por tanto no se puede aplicar la ley de Laplace.

Hay que calcular la probabilidad del suceso  $S = \{1\}$

Reinterpretamos la experiencia aleatoria como lanzar dos monedas y decir el resultado de cada una de ellas (C: cara, X: cruz), siempre en el mismo orden:

	C	X
C	CC	CX
X	XC	XX

 $\Rightarrow$ 

	C	X
C	2	1
X	1	0

Utilizamos el espacio muestral auxiliar  $E_{aux} = \{CC, CX, XC, XX\}$ , que es equiprobable y por tanto se puede aplicar la ley de Laplace. Tiene  $2 \cdot 2 = 4$  casos.

Hay que calcular la probabilidad del suceso  $S_{aux} = \{CX, XC\}$ . Tiene dos casos.



















































































La probabilidad de S es:  $p(S) = p(S_{aux}) = \frac{2}{4} = 0,5$ .

Solución: 0,5














- ② El espacio muestral es  $E = \{2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$ , que no es equiprobable y por tanto no se puede aplicar la ley de Laplace.

Hay que calcular la probabilidad del suceso  $S = \{9, 10, 11, 12\}$

Reinterpretamos la experiencia aleatoria como lanzar dos dados y decir el resultado de cada uno de ellos, siempre en el mismo orden:

 $\Rightarrow$ 

							
	2	3	4	5	6	7	
	3	4	5	6	7	8	
	4	5	6	7	8	9	
	5	6	7	8	9	10	
	6	7	8	9	10	11	
	7	8	9	10	11	12	

Utilizamos el espacio muestral auxiliar  $E_{aux} = \{1-1, \dots, 6-6\}$ , que es equiprobable y por tanto se puede aplicar la ley de Laplace. Tiene  $6 \cdot 6 = 36$  casos.

Hay que calcular la probabilidad del suceso

$S_{aux} = \{63, 54, 45, 36, 64, 55, 46, 65, 56, 66\}$ . Tiene 10 casos.

La probabilidad de S es:  $p(S) = p(S_{aux}) = \frac{10}{36} = 0,28$ .

Solución: 0,28