

Combining Probabilities

#	p(A)	p(B)	p(A ∪ B)	p(A ∩ B)	Mutually exclusive?	Independent?	Impossible?
1	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{2}{3}$				
2	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{5}{6}$				
3	$\frac{1}{2}$	$\frac{1}{3}$	1				
4	$\frac{1}{2}$	$\frac{1}{4}$		$\frac{2}{3}$			
5	$\frac{1}{2}$	$\frac{1}{4}$		$\frac{7}{8}$			
6	$\frac{1}{2}$	$\frac{2}{3}$		$\frac{1}{3}$			
7	$\frac{1}{2}$		$\frac{1}{3}$	$\frac{1}{4}$			
8		$\frac{1}{3}$		$\frac{2}{15}$		✓	
9	$\frac{1}{6}$		$\frac{1}{2}$		✓		
10		$\frac{5}{6}$		$\frac{1}{3}$		✓	

Answers

#	$p(A)$	$p(B)$	$p(A \cup B)$	$p(A \cap B)$	Mutually exclusive?	Independent?	Impossible?
1	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{2}{3}$	$\frac{1}{6}$		✓	
2	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{5}{6}$	0	✓		
3	$\frac{1}{2}$	$\frac{1}{3}$	1	X			✓
4	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{12}$	$\frac{2}{3}$			
5	$\frac{1}{2}$	$\frac{1}{4}$	X	$\frac{7}{8}$			✓
6	$\frac{1}{2}$	$\frac{2}{3}$	$\frac{5}{6}$	$\frac{1}{3}$		✓	
7	$\frac{1}{2}$	$\frac{1}{12}$	$\frac{1}{3}$	$\frac{1}{4}$			
8	$\frac{2}{5}$	$\frac{1}{3}$	$\frac{9}{15}$	$\frac{2}{15}$		✓	
9	$\frac{1}{6}$	$\frac{1}{3}$	$\frac{1}{2}$	0	✓		
10	$\frac{2}{5}$	$\frac{5}{6}$	$\frac{7}{30}$	$\frac{1}{3}$		✓	