317 2015-01-22

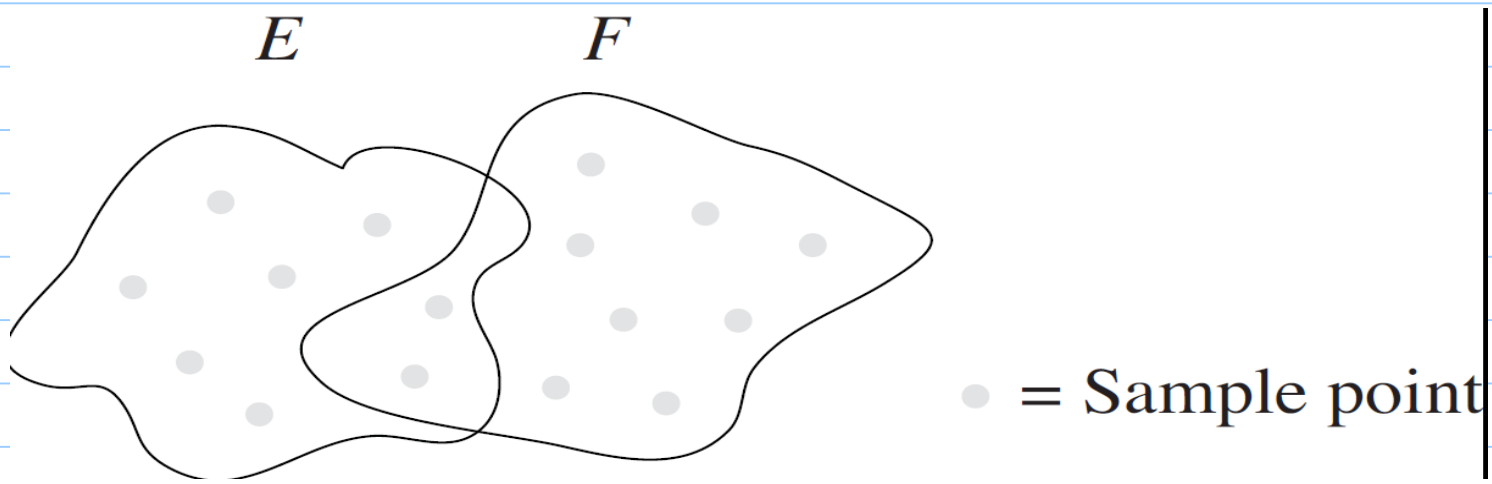
Note Title 2015-01-22

	E_1			E_2	
$\Omega =$	(1,1)	(1,2)	(1,3)	(1,4)	(1,5)	(1,6)
	(2,1)	(2,2)	(2,3)	(2,4)	(2,5)	(2,6)
	(3,1)	(3,2)	(3,3)	(3,4)	(3,5)	(3,6)
	(4,1)	(4,2)	(4,3)	(4,4)	(4,5)	(4,6)
	(5,1)	(5,2)	(5,3)	(5,4)	(5,5)	(5,6)
	(6,1)	(6,2)	(6,3)	(6,4)	(6,5)	(6,6)

E_1 and E_2 are mutually exclusive ($E_1 \cap E_2$ is empty; $E_1 \wedge E_2$ is false)

$$P(E_1 \vee E_2) \; (= P(E_1 \cup E_2)) =$$

$$P(E_1) + P(E_2) - P(E_1 \cap E_2)$$



Venn diagram

$P(E \cup F) \leq P(E) + P(F)$ with equality iff E and F are mutually exclusive.