



1 DEFINITIONS

1. For any event A , $0 \leq \Pr(A) \leq 1$.
2. $A \cup B \triangleq A + B$.
3. $A \cap B \triangleq AB$.
4. The null and complete event are $\phi = 0, S = 1$.
5. If $AB = 0$, $\Pr(A + B) = \Pr(A) + \Pr(B)$.
6. $(A + B)' = A'B'$

2 PROBLEMS

Prove the following:

1.

$$A = AB + AB' \quad (2.1.1)$$

2.

$$\Pr(A) = \Pr(AB) + \Pr(AB') \quad (2.2.1)$$

3.

$$A + B = B + AB' \quad (2.3.1)$$

4.

$$\Pr(A + B) = \Pr(A) + \Pr(B) - \Pr(AB) \quad (2.4.1)$$