

MCS 256: DISCRETE CALCULUS AND PROBABILITY

Problem on probabilities and conditional probabilities of unions, intersections, and complements

Assume that A and B are events with $P(A) = x$ and $P(B) = y$ where $x \geq 0$, $0 < y < 1$, and $x + y \leq 1$. Calculate the following probabilities and conditional probabilities for each of the given information situations.

GIVEN INFORMATION	$P(A \cup B)$	$P(A \cap B)$	$P(\bar{A} \cup \bar{B})$	$P(A B)$	$P(\bar{A} B)$	$P(A \bar{B})$
A and B are disjoint.						
A and B are independent.						
$P(A \cap B) = z$.						
$P(A \cup B) = w$.						
$P(A B) = u$.						
$P(B A) = v$.						
Nothing is known about how A and B are related. (Give min and max values.)	Min					
	Max					