

Naive Bayes Hw

1.

Class Probability

$P(N)$	$3/7$	$P(P)$	$4/7$
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Likelihood Prob

	$P(R N)$	$1/3$	$P(R P)$	$1/4$
	$P(G N)$	$1/3$	$P(G P)$	$0/4$
color	$P(B N)$	$1/3$	$P(B P)$	$3/4$
Size	$P(B N)$	$2/3$	$P(B P)$	$1/2$
	$P(S N)$	$1/3$	$P(S P)$	$1/2$

Small, Blue

$$2. \quad P(P|(S, B)) = P(P) \cdot P(S|P) \cdot P(B|P) \\ 4/7 \cdot 1/2 \cdot 3/4 = 0.214$$

$$P(N|(S, B)) = P(N) \cdot P(S|N) \cdot P(B|N) \\ 3/7 \cdot 1/3 \cdot 1/3 = 0.0476$$

Output: P

3.

	P	N
Bayes val	0.214	0.0476
Norm. Prob.	0.8180	0.1820