Training Data

Spam?	E-mail body
1	Money is free now
0	Pat teach 380
0	Pat free to teach
1	Sir money to teach
1	Pat free money now
0	Teach 380 now
0	Pat to teach 380

Vocabulary

380
free
is
money
now
Pat
Sir
teach
to
tomorrow

$P(Y = 0)$	$P(Y = 1)$

j	$P(X_j = 1 \mid Y = 0)$	$P(X_j = 1 \mid Y = 1)$
380		
free		
is		
money		
now		
Pat		
Sir		
teach		
to		
tomorrow		

Test Data

Spam? E-mail body

Pat teach now

j	x	$P(X_j = x \mid Y = 0)$	$P(X_j = x \mid Y = 1)$
380	0		
free	0		
is	0		
money	0		
now	1		
Pat	1		
Sir	0		
teach	1		
to	0		
tomorrow	0		

$P(Y = 0)$	$P(Y = 1)$
4/7	3/7

Pat teach now

$P(Y = 0, X_1, \ldots, X_M)$	$P(Y = 1, X_1, \ldots, X_M)$

Pat teach now

$P(Y = 0 \mid X_1, \ldots, X_M)$	$P(Y = 1 \mid X_1, \ldots, X_M)$