Naïve Bayes

$$P(A|B) = \frac{P(B|A) * P(A)}{P(B)}$$

$$= \frac{3/5 * 5/14}{5/14}$$

$P(A|B) = 3/5$

Frequency Table

	Y	N
Sunny	3	2
Overcast	4	0
Rainy	2	3

$P(B|A) = 4/4 = 1$

Weather	Play
Sunny	No
Overcast	Yes
Rainy	Yes
Sunny	Yes
Sunny	Yes
Overcast	Yes
Rainy	No
Rainy	No
Sunny	Yes
Rainy	Yes
Sunny	No
Overcast	Yes
Overcast	Yes
Rainy	No

14

$P(B|A) = 3/5$

$P(A) = 5/14$

$P(B) = 5/14$

A: whether "Rainy" → W -> "0" → Play -> "N"

$P(A) = 4/14$

B: Play "No" / Play "Y" → weather "Rainy"

$P(B) = 9/14$

$$P(A|B) = \frac{P(B|A) * P(A)}{P(B)}$$

$$= \frac{1 * 4/14}{9/14}$$

$$= \frac{4}{9}$$