

outlook	temp.	humidity	Windy
sunny	cool	high	True

For Yes

$$P(\text{outlook} = \text{"Sunny"})$$

$$= \frac{2}{9}$$

$$P(\text{Temp} = \text{"cool"}) = \frac{3}{9}$$

$$P(\text{Humid} = \text{"high"}) = \frac{3}{9}$$

$$P(\text{Windy} = \text{"True"}) = \frac{3}{9}$$

$$P(Y) = \left( \frac{2}{9} \times \frac{3}{9} \times \frac{3}{9} \times \frac{3}{9} \right) \times \frac{9}{14} = \boxed{\text{normal}} = 0.0063$$

outlook	temp.	humidity	windy	play	outlook	temp.	humidity	windy	play
sunny	hot	high	false	no	sunny	mild	high	false	no
sunny	hot	high	true	no	sunny	cool	normal	false	yes
overcast	hot	high	false	yes	rainy	mild	normal	false	yes
rainy	mild	high	false	yes	sunny	mild	normal	true	yes
rainy	cool	normal	false	yes	overcast	mild	high	true	yes
rainy	cool	normal	true	no	overcast	hot	normal	false	yes
overcast	cool	normal	true	yes	rainy	mild	high	true	no

### Frequency Table

Outlook	Y	N
Sunny	2	3
Overcast	4	0
rainy	3	2

Humidity	Y	N
high	3	4

temp	Y	N
hot	2	2
mild	4	2
cool	3	1

Windy	Y	N
false	6	2
true	3	3

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$$P(\text{Not } \text{Outlook} = \text{"Sunny"}) = \frac{3}{5}$$

$$P(A|B)$$

$$P(\text{Not } \text{Temp} = \text{"Cool"}) = \frac{1}{5}$$

$$P(B|A)$$

$$P(\text{Not } \text{Humid} = \text{"high"}) = \frac{4}{5}$$

$$P(\text{Not } \text{Windy} = \text{"True"}) = \frac{3}{5}$$

$$P(N) = \left( \frac{3}{5} \times \frac{1}{5} \times \frac{4}{5} \times \frac{3}{5} \right) \times \frac{5}{14} = \boxed{0.02}$$