

# Example

Outlook

	Yes	No	P(Yes)	P(No)
Sunny	2	3	2/5	3/5
Overcast	4	0	4/5	0/5
Rain	3	2	3/5	2/5
Total	9	5	100%	100%

Humidity

	Yes	No	P(Yes)	P(No)
High	3	4	3/9	4/9
Normal	6	1	6/9	1/9
Total	9	5	100%	100%

Temp.

	Yes	No	P(Yes)	P(No)
Hot	2	2	2/5	2/5
Mild	4	2	4/6	2/6
Cool	3	1	3/4	1/4
Total	9	5	100%	100%

Wind

	Yes	No	P(Yes)	P(No)
False	6	2	6/8	2/8
True	3	3	3/6	3/6
Total	9	5	100%	100%

Play (Today)

Play	P(Yes/No)
Yes	9/14
No	5/14
Total	14

Probability of playing golf is given by:-

$$P(\text{Yes}|\text{Today}) = \frac{P(\text{Sunny}|\text{Outlook}) \cdot P(\text{Hot}|\text{Temp}) \cdot P(\text{Normal}|\text{Humidity}) \cdot P(\text{No}|\text{Wind})}{P(\text{Today})}$$

$$= \frac{2}{9} \cdot \frac{2}{5} \cdot \frac{6}{9} \cdot \frac{6}{9} \cdot \frac{9}{14} \approx 0.01411$$

$$P(\text{No}|\text{Today}) = \frac{P(\text{Overcast}|\text{Outlook}) \cdot P(\text{Mild}|\text{Temp}) \cdot P(\text{Normal}|\text{Humidity}) \cdot P(\text{No}|\text{Wind})}{P(\text{Today})}$$

So, if the weather is like today, the probability of playing golf is 0.0068.