

So the formula for conditional probability:

$P(A|B) = \frac{P(A \cap B)}{P(B)}$ → Probability of event A occurred and event B occurred

Probability of event B

Bayes' Rule

Posterior Probability
= Likelihood of an event after the evidence

P(A|B) = P(B|A) * P(A) / P(B)

If it's easier to calculate P(B|A) than P(A|B), then use Bayes' Rule.

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

If I want to write this formula in terms of our dataset X and Y

$$\frac{d^2 \mathbf{r}}{dt^2} = \frac{\mathbf{r} \cdot \nabla \Phi(\mathbf{r})}{\mathbf{r}^2}$$

Wine, Dye

Fig. 1. Location of the studied area in the Khabarovsk Krai.

Correlations are independent of our
order we disregard the denominator
value.

	control	1:100 dilution	1:1000 dilution	1:10000 dilution
1	100	100	100	100
2	100	100	100	100
3	100	100	100	100
4	100	100	100	100
5	100	100	100	100
6	100	100	100	100
7	100	100	100	100
8	100	100	100	100
9	100	100	100	100
10	100	100	100	100
11	100	100	100	100
12	100	100	100	100
13	100	100	100	100
14	100	100	100	100
15	100	100	100	100
16	100	100	100	100
17	100	100	100	100
18	100	100	100	100
19	100	100	100	100
20	100	100	100	100
21	100	100	100	100
22	100	100	100	100
23	100	100	100	100
24	100	100	100	100
25	100	100	100	100
26	100	100	100	100
27	100	100	100	100
28	100	100	100	100
29	100	100	100	100
30	100	100	100	100
31	100	100	100	100
32	100	100	100	100
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34	100	100	100	100
35	100	100	100	100
36	100	100	100	100
37	100	100	100	100
38	100	100	100	100
39	100	100	100	100
40	100	100	100	100
41	100	100	100	100
42	100	100	100	100
43	100	100	100	100
44	100	100	100	100
45	100	100	100	100
46	100	100	100	100
47	100	100	100	100
48	100	100	100	100
49	100	100	100	100
50	100	100	100	100

Step 1.

Day	4	5	6	7	8
1st	1	3	1	1	1
2nd	3	2	3	2	1

8 6

	Size of Network			
	Size	Size	FFreq	FFreq
FFreq	0	1	0.00	0.00
Size	0	1	0.00	0.00
Size	0	1	0.00	0.00
Total	0	0	0.00%	0.00%

	Body Color			
	Yell	Min	P(Yell)	P(Min)
Black	4	1	3/5	1/5
White	4	2	4/5	2/5
Green	1	3	1/5	3/5
Total	9	6	100%	100%

Step 2

$$P(Z) = \frac{6}{14}$$

$$P(Y) = \frac{8}{14}$$

Step 3 ^{new} (Cow, Medium, Black)

$$P(\text{Yes} | \text{New}) = P(\text{Cow} | \text{Yes}) * P(\text{Medium} | \text{Yes}) * P(\text{Black} | \text{Yes}) * P(Y) \\ = 3/8 * 2/8 * 3/8 * 8/14 = 0.02$$

$$P(\text{No} \mid \text{new}) = 2/6 * 2/6 * 1/6 * 6/14 = 0.007$$

Step 4 \Rightarrow

We need to normalize because probabilities sum should be 1

$$P(\text{Yes} \mid \text{New}) = 0.02 / 0.02 + 0.007 = 0.74$$

$$P(\text{No} \mid \text{New}) = 0.007 / 0.007 + 0.02 = 0.26$$

$P(\text{Yes} | \text{New}) > P(\text{No} | \text{New})$ so result will be yse for the new data