

# conditional\_probability\_bayes\_rule

January 21, 2019

## 1 Conditional Probability & Bayes Rule Quiz

```
In [1]: # load dataset
import numpy as np
import pandas as pd
```

```
df = pd.read_csv('cancer_test_data.csv')
df.head()
```

```
Out[1]:
```

	patient_id	test_result	has_cancer
0	79452	Negative	False
1	81667	Positive	True
2	76297	Negative	False
3	36593	Negative	False
4	53717	Negative	False

```
In [3]: # What proportion of patients who tested positive has cancer?
cancer_pos = df.query('test_result == "Positive"')['has_cancer'].mean()
cancer_pos
```

```
Out[3]: 0.34282178217821785
```

```
In [4]: # What proportion of patients who tested positive doesn't have cancer?
1 - cancer_pos
```

```
Out[4]: 0.65717821782178221
```

```
In [5]: # What proportion of patients who tested negative has cancer?
cancer_neg = df.query('test_result == "Negative"')['has_cancer'].mean()
cancer_neg
```

```
Out[5]: 0.013770180436847104
```

```
In [6]: # What proportion of patients who tested negative doesn't have cancer?
1 - cancer_neg
```

```
Out[6]: 0.98622981956315292
```

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In [ ]:
```