cancer_test_results

October 31, 2021

1 Cancer Test Results

```
In [2]: # load dataset
        import pandas as pd
        df = pd.read_csv("cancer_test_data.csv")
        df.head()
```

```
Out[2]:    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 [13]: # number of patients
         import numpy as np
         T = df.shape[0]
         T
```

```
Out[13]: 2914
```

```
In [14]: # number of patients with cancer

         c = df[df['has_cancer'] == True].shape[0]
         c
```

```
Out[14]: 306
```

```
In [15]: # number of patients without cancer
         w = T - c
         w
```

```
Out[15]: 2608
```

```
In [16]: # proportion of patients with cancer
         c/T
```

```
Out[16]: 0.10501029512697323
```

```
In [17]: # proportion of patients without cancer
         1 - c/T
```

Out[17]: 0.8949897048730268

```
In [22]: # proportion of patients with cancer who test positive
         pc = df[(df['has_cancer'] == True) & (df['test_result'] == 'Positive')].shape[0]
         pc
```

Out[22]: 277

```
In [29]: pc
```

Out[29]: 277

```
In [30]: # proportion of patients with cancer who test negative
         nc = df[(df['has_cancer'] == True) & (df['test_result'] == 'Negative')].shape[0]
         nc
```

Out[30]: 29

```
In [32]: pc / (pc + nc)
```

Out[32]: 0.9052287581699346

```
In [31]: nc / (pc + nc)
```

Out[31]: 0.09477124183006536

```
In [33]: # proportion of patients without cancer who test positive
         pw = df[(df['has_cancer'] == False) & (df['test_result'] == 'Positive')].shape[0]
         pw
```

Out[33]: 531

```
In [34]: # proportion of patients without cancer who test negative
         nw =  df[(df['has_cancer'] == False) & (df['test_result'] == 'Negative')].shape[0]
         nw
```

Out[34]: 2077

```
In [35]: pw / (pw + nw)
```

Out[35]: 0.2036042944785276

```
In [36]: nw / (pw + nw)
```

Out[36]: 0.7963957055214724

```
In [ ]:
```