In [1]:
```
ol = [0, 0, 1, 0, 1, 1, 0] # sunny = 0 and cloudy = 1
temp = [0, 1, 1, 1, 0, 0 ,0] # cold = 0 and warm = 1
run = [0, 1, 0, 0, 0, 1, 1] # indor = 0 and outdoor = 1
coat = [0, 0, 0, 0, 1, 1, 1] # no = 0 and yes = 1
```

In [2]:
```
count_ol_cloudy = 0
count_ol_yes = 0
for i in range(len(coat)):
    if coat[i] == 1:
        count_ol_yes += 1
        if ol[i] == 1:
            count_ol_cloudy += 1
cloudy_yes = count_ol_cloudy / count_ol_yes
print(count_ol_cloudy)
print(count_ol_yes)
print(cloudy_yes)

count_ol_warm = 0
count_ol_yes_1 = 0
for i in range(len(coat)):
    if coat[i] == 1:
        count_ol_yes_1 += 1
        if temp[i] == 1:
            count_ol_warm += 1
warm_yes = count_ol_warm / count_ol_yes_1
print(count_ol_warm)
print(count_ol_yes)
print(warm_yes)
```

```
2
3
0.6666666666666666
0
3
0.0
```

In [3]:
```
count_ol_outdoor = 0
count_ol_yes_2 = 0
for i in range(len(coat)):
    if coat[i] == 1:
        count_ol_yes_2 += 1
        if run[i] == 1:
            count_ol_outdoor += 1
outdoor_yes = count_ol_warm / count_ol_yes_2
print(count_ol_outdoor)
print(count_ol_yes_2)
print(outdoor_yes)
```

```
2
3
0.0
```

In [4]:
```
count_yes = 0
for i in range(len(coat)):
    if coat[i] == 1:
        count_yes += 1
pro_yes = count_yes / len(coat)
print(pro_yes)
```

```
0.42857142857142855
```

In [5]:
```
count_cloudy = 0
for i in range(len(ol)):
    if ol[i] == 1:
        count_cloudy += 1
pro_cloudy = count_cloudy / len(ol)
print(pro_cloudy)
```

```
0.42857142857142855
```

In [6]:
```
count_warm = 0
for i in range(len(temp)):
    if temp[i] == 1:
        count_warm += 1
pro_warm = count_warm / len(temp)
print(pro_warm)
```

```
0.42857142857142855
```

In [7]:
```
count_outdoor = 0
for i in range(len(run)):
    if run[i] == 1:
        count_outdoor += 1
pro_outdoor = count_outdoor / len(run)
print(pro_outdoor)
```

```
0.42857142857142855
```

In [8]:
```
pro_yes_x =(cloudy_yes * warm_yes * outdoor_yes * pro_yes) / (pro_cloudy * pro_wa
print(pro_yes_x)
```

```
0.0
```

In [9]:
```
count_ol_cloudy_1 = 0
count_ol_no_2 = 0
for i in range(len(coat)):
    if coat[i] == 0:
        count_ol_no_2 += 1
        if ol[i] == 1:
            count_ol_cloudy_1 += 1
cloudy_no = count_ol_cloudy_1 / count_ol_no_2
print(count_ol_cloudy_1)
print(count_ol_no_2)
print(cloudy_no)
```

```
1
4
0.25
```

In [10]:
```
count_ol_warm_1 = 0
count_ol_no_2 = 0
for i in range(len(coat)):
    if coat[i] == 0:
        count_ol_no_2 += 1
        if temp[i] == 1:
            count_ol_warm_1 += 1
warm_no = count_ol_warm_1 / count_ol_no_2
print(count_ol_warm_1)
print(count_ol_no_2)
print(warm_no)
```

```
3
4
0.75
```

In [11]:
```
count_ol_outdoor_1 = 0
count_ol_no_2 = 0
for i in range(len(coat)):
    if coat[i] == 0:
        count_ol_no_2 += 1
        if run[i] == 1:
            count_ol_outdoor_1 += 1
outdoor_no = count_ol_outdoor_1 / count_ol_no_2
print(count_ol_outdoor_1)
print(count_ol_no_2)
print(outdoor_no)
```

```
1
4
0.25
```

In [12]:
```
count_no = 0
for i in range(len(coat)):
    if coat[i] == 0:
        count_no += 1
pro_no = count_no / len(coat)
print(pro_no)

count_cloudy_1 = 0
for i in range(len(ol)):
    if ol[i] == 1:
        count_cloudy_1 += 1
pro_cloudy_1 = count_cloudy_1 / len(ol)
print(pro_cloudy_1)

count_warm_1 = 0
for i in range(len(temp)):
    if temp[i] == 1:
        count_warm_1 += 1
pro_warm_1 = count_warm_1 / len(temp)
print(pro_warm_1)

count_outdoor_1 = 0
for i in range(len(run)):
    if run[i] == 1:
        count_outdoor_1 += 1
pro_outdoor_1 = count_outdoor_1 / len(run)
print(pro_outdoor_1)
```

```
0.5714285714285714
0.42857142857142855
0.42857142857142855
0.42857142857142855
```

In [13]:
```
pro_no_x = (cloudy_no * warm_no * outdoor_no * pro_no) / (pro_cloudy_1 * pro_warm
print(pro_no_x)
```

```
0.3402777777777778
```