

10-29_MF_prob.bay_Example_1_simulation

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```
[1]: import numpy as np
```

```
[2]: P_defective = 0.001  
P_test = 0.99989888981011  
samples = 10000000
```

```
[3]: x = np.random.uniform(0, 1, samples)
```

```
[4]: defective = x < P_defective
```

```
[5]: np.mean(defective)
```

```
[5]: 0.0010003
```

```
[6]: y = np.random.uniform(0, 1, samples)
```

```
[7]: test_correct = y < P_test
```

```
[8]: np.mean(test_correct)
```

```
[8]: 0.9998993
```

```
[9]: tested_defective = defective & test_correct
```

```
[10]: np.sum(defective)
```

```
[10]: 10003
```

```
[11]: np.sum(tested_defective)
```

```
[11]: 10000
```

```
[12]: np.sum(tested_defective) / np.sum(defective)
```

```
[12]: 0.9997000899730081
```

```
[ ]:
```