Bayes Theorem

Mach1: 30 wrenches / hr

Mach2: 20 wrenches / hr

Out of all produced parts:

We can SEE that 1% are defective

Out of all defective parts:

We can SEE that 50% came from mach1

And 50% came from mach2

Question:

What is the probability that a part
produced by mach2 is defective = ?

-> P(Mach2) = 20/50 = 0.4

-> P(Defect) = 1%

-> P(Mach2 | Defect) = 50%

-> P(Defect | Mach2) = ?

$$P(\text{Defect} \mid \text{Mach2}) = \frac{0.5 \quad * \quad 0.01}{0.4} = 0.0125 = 1.25\%$$