**Ex. on using NB for article classification**

**Step 2: After training, how to use the NB model:**

1. I want to label this new article (I do not know what it is about)
2. Take **100 most frequent words** in a doc w1, w2, … w100
3. Compute
P(C1)\*P(w1|C1)\*P(w2|C1)…. P(w100|C1)

P(C2)\*P(w1|C2)\*P(w2|C2)…. P(w100|C2)

…

P(C20)\*P(w1|C20)\*P(w2|C20)…. P(w100|C20)

1. Take argmax 🡺 C17

**Step 1: Training**

P(w1|C1) = P(“God”|C1) =

$$=\frac{Total\#"God" in RedDocFC1+ 1 }{Total\#words in RedDocFC1+38,500}$$

