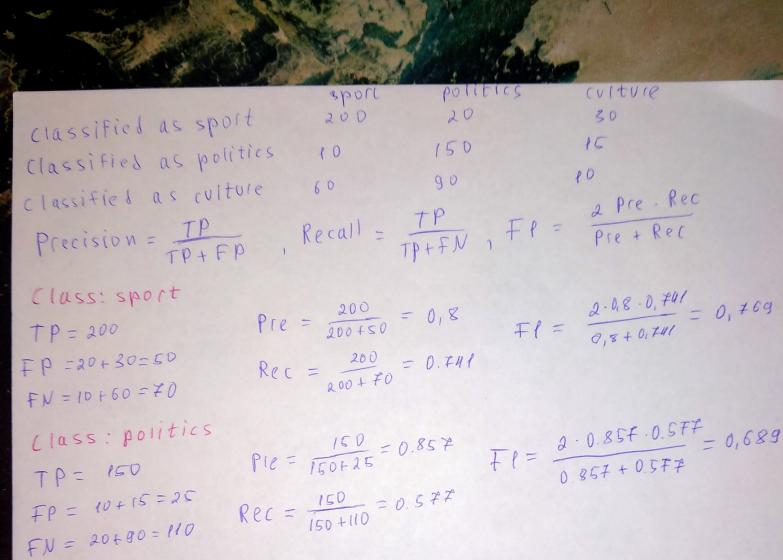
```
Task A
 P(spam 1"cool bicycles and motorbikes) = P(spam) . P(cool Ispam).
 · P (bicycles / spam) · P(and | spam) · P(motorbikes / spam)
P(not spam | "cool bicycles and motor bikes) = P(not spam).
P(1001 | not spam). P(bicycles | not spam). P(and) not spam). P(motorbikes | not spam)
 P(spam) = \frac{3}{6} = \frac{1}{3}
p(\text{not spam}) = \frac{3}{L} = \frac{1}{2}
Laplace smoothing
 P(WIC) = Count (w in c) +1

total words in class + Vocabulary size
Total words in spam = 14 Vocabulary size = 27
Total words in normal = 25
                                            p(and | spam) = 2+1
ED p(cool | spam) = 0+1
                                            p ( motorbikes | spam = 2+1
     P (Bicycles Ispum) = 2+1
                                     p(and | normal) = \frac{2+1}{25+2F}
    P((00) | normal) = 1+1
    P(bicycles | normal) = \frac{2+1}{25+27}
P(motorbikes | normal) = \frac{2+1}{25+27}
P(\text{spam} \mid \text{Message}) = \frac{\ell}{2} \cdot \frac{1.3.3.3}{414} = \left| u.77.10^{-6} \right|
P(normal | Message = \frac{1}{2} \cdot \frac{2 \cdot 8 \cdot 3 \cdot 3}{524} = \boxed{3.69.10}
```

Zhelru Kanat



Class culture TP = 10 FP = 60+90=150

FN = 30 F15 = 45

Zhetru Kanat

$$Pie = \frac{10}{10+150} = 0.063$$

$$Fil = \frac{2 \cdot 0.063 \cdot 0.182}{0.063 + 0.182} = 0.093$$

$$Rec = \frac{10}{10+45} = 0.182$$