

|| ghicim strivirea

```

    7 → x[] = 1 0 _ _ _ _ _ _ _ _ max
    max = 0;
    for (i = 0; i < n; i++)
        for (j = 0; j <= 3; j++)
            if (abs(v[i][j]) > max)
                max = abs(v[i][j]);
    [ for (i = 0; i <= max; i++)
        choose x[i] in {0, 1};

    // verify data are given correct
    if (isTrue(v, n, x) == true)
        print("success"); // DA
    else print("failure"); // Hu Shi

```

```

isTrue (v[i][j], n, x[j])
}
for (i = 0; i < n; i++)
{
    Δ = 0;
    for (j = 0; j < 3; j++)
    {
        if (v[i][j] > 0)
            Δ = Δ + x[v[i][j]]
        else Δ = Δ + (1 - x[abs(v[i][j])]);
    }
    if (Δ == 0) return false;
}
return true;
}

```



7b φ - 3DNF $(x_1 \wedge \neg x_2 \wedge x_3) \vee (\neg x_1 \wedge \dots)$

INPUT: $v[n][3] = \varphi$ in 3DNF, n -no. de conjuncti

OUTPUT: DA - dacă 4 este validă
NU - altfel.

|| ghicim atribuirea care face formula falsă

----- // calcul max. dim v

for ($i=0; i < n; i++$)
choose $x[i]$ in $\{0, 1\}$;

if (isTrue DNF(σ , n , x) == false)

```
print ("failure"); // NO
```

```
else print("success"); // No Str
```

⑧ X_i - alg. se oprește după i iterații
(timpul de execuție este i)

$$P(x_1) = n p \cdot (n-1)! \cdot \frac{1}{n!} \quad n p = \left\lfloor \frac{n}{2} \right\rfloor + 1$$

$$\begin{array}{l} \frac{P}{4} \frac{n-1}{n! \cdot (n-1)!} \\ 2 \end{array} \quad \begin{array}{l} 0 \text{ --- } \\ 2 \text{ --- } \end{array} \quad \begin{array}{l} n=4 \quad 5 \\ 0 \quad 2 \quad 0 \quad 2 \quad 4 \end{array}$$

$$P(X_2) = n! \cdot n! \cdot (n-2)! \cdot \frac{1}{n!}$$

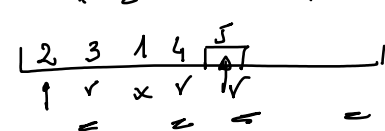
$$P(X_2) = \frac{A_{ni}^2 \cdot np \cdot (n-3)!}{n!}$$

$$P(X_k) = A_{ni}^{k-1} \cdot n! \cdot (n-k)! \cdot \frac{1}{n!}$$

$$P(X_{n_i+1})$$

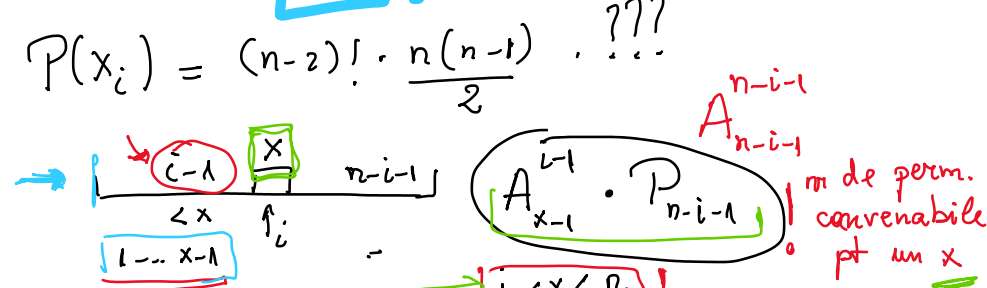
$$\begin{aligned} E(T(n)) &= \sum_{k=1}^{n+1} k \cdot P(X_k) \\ &= \sum_{k=1}^{n+1} k \cdot A_{n+1}^{k-1} \cdot n! \cdot (n-k)! \cdot \frac{1}{n!} \end{aligned}$$

⑨ $a_0, a_1, a_2, \dots, a_n$



$X_i =$ "programul execută buclă inter
la parul i " $\rightarrow 0/1$

$$T(n) = 2 + \sum_{i=0}^{n-1} (x_i \cdot (1+n))$$



$$P(x_i) = \left(\sum_{x=i}^n A_{x-1} \cdot P_{n-i-1} \right) \cdot \frac{1}{n!}$$

$$E(T(n)) = 2 \cdot \sum_{i=0}^{n-1} E(X_i) \cdot (1+n)$$

$$= 2 + \sum_{i=0}^{n-1} \underbrace{P(x_i) \cdot (1+n)}$$

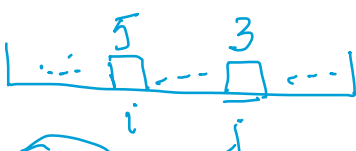
$$E(T(n)) = E\left(2 + \sum_{i=0}^{n-1} x_i \cdot (1+n)\right)$$

$$E(A \cdot B) = E(A) \cdot E(B)$$

$$E(A+B) = E(A) + E(B)$$

$v[i] > v[j] \rightarrow$ bucla infinit.

$$T(n) = 2 + \sum_{i=0}^{n-2} \sum_{j=i+1}^{n-1} X_{ij} \quad n$$

$$X_{i,j} = "v[i] > v[j]"$$


$$P(x_{ij}) = C_n^2 \cdot (n-2)! \cdot \frac{1}{n!}$$

$$\begin{aligned} E(T(n)) &= 2 + \sum_{i=0}^{n-2} \sum_{j=i+1}^{n-1} E(x_{ij}) \cdot n \\ &= 2 + \sum_{i=0}^{n-2} \sum_{j=i+1}^{n-1} P(x_{ij}) \cdot n \end{aligned}$$