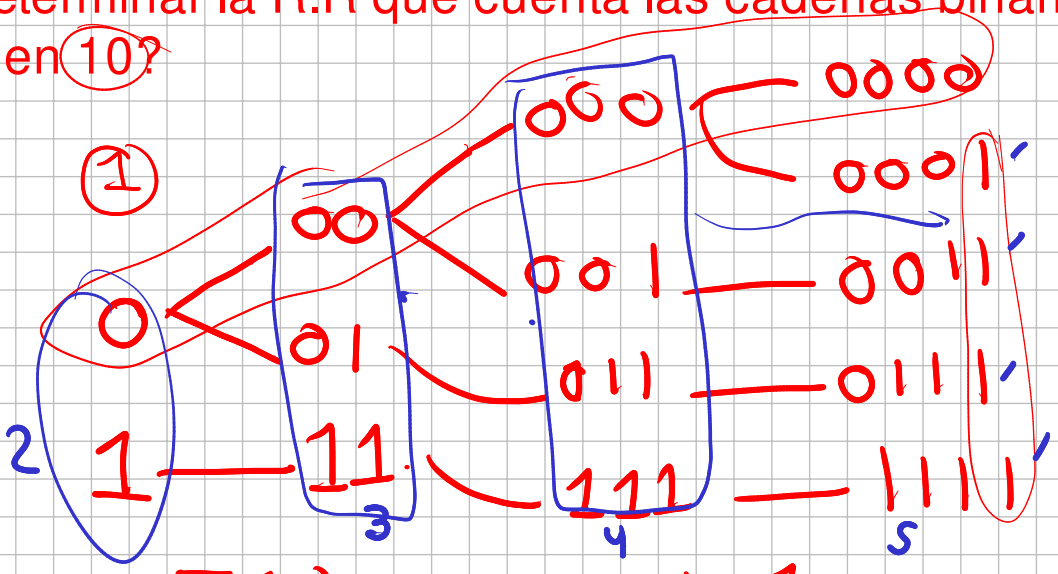
¿Determinar la R.R que cuenta las cadenas binarias que no tienen 10?



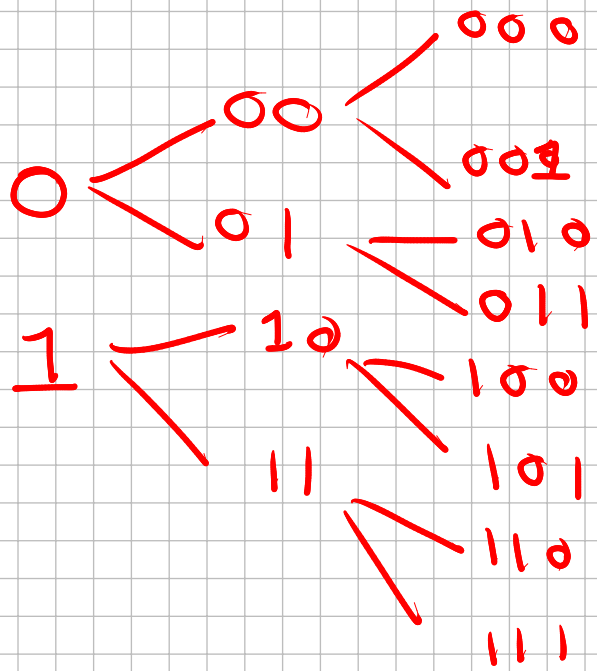
$$T(n) = T(n-1) + 1$$

$T(1) = 2$

$T(2) = 3$

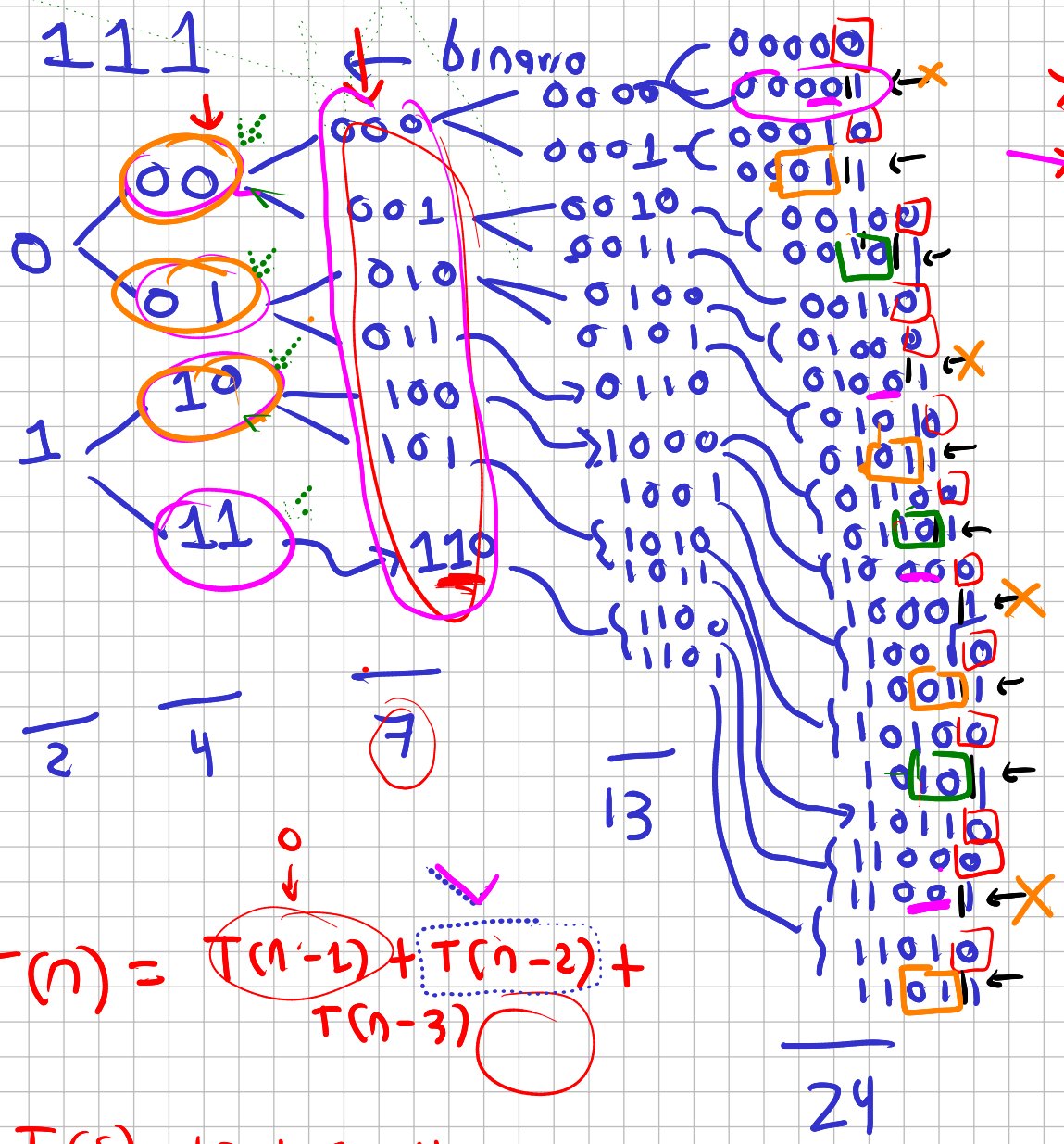
$T(3) = 4$

$T(4) = 5$



$$T(n) = \overbrace{T(n-1)}^{0} + \overbrace{T(n-1)}^{1}$$

$$T(n) = 2T(n-1)$$



00	1
01	1
10	1

$T(n) = T(n-1) + T(n-2) + T(n-3)$

$T(5) = 13 + 7 + 4$

$13 = 7 + 2 \times 3 - 1 =$

$T(1) = 2$

$T(2) = 4$

$T(3) = 7$

$$T(n) = T(n-1) + T(n-2) + \dots + T(n-k)$$

$$T(n) = 4T(n-1) + 8T(n-2) - 16T(n-3)$$

$T(0)=10$
$T(1)=15$
$T(2)=22$

$T(n)=r^n$

$$r^n = 4r^{n-1} + 8r^{n-2} - 16r^{n-3}$$

$$\frac{r^n}{r^{n-3}} = \frac{4r^{n-1}}{r^{n-3}} + \frac{8r^{n-2}}{r^{n-3}} - \frac{16r^{n-3}}{r^{n-3}}$$

$r^{n-3} = r^n r^{-3}$

$$\frac{r^n}{r^n r^{-3}} = \frac{4r^n r^{-1}}{r^n r^{-3}} + \frac{8r^n r^{-2}}{r^n r^{-3}} - \frac{16r^n r^{-3}}{r^n r^{-3}}$$

$$r^3 = 4r^2 + 8r^1 - 16$$

$$r^3 - 4r - 8r + 16 = 0$$

EC :)

$$T(n) = A(r_1)^n + B(r_2)^n + C(r_3)^n$$

$$T(n) = A(4.96)^n + B(-2.34)^n + C(1.37)^n$$

$T(0)=10$
$T(1)=15$
$T(2)=22$

$$10 = A + B + C$$
$$15 = 4.96A - 2.34B + 1.37C$$
$$22 = (4.96)^2 A + (-2.34)^2 B + (1.37)^2 C$$

[0.17140459 -0.18454381 10.01313922]

$$T(n) = 0.17(4.96)^n - 0.184(-2.34)^n + 10.01(1.37)^n$$