1 P_{55}: $55+1=56=32+16+8=2^3+2^4+2^5$

$a_1 = 3$ | $J(0,0,1)$

$a_2 = 4-3-1=0$ | $Z(0)$

$a_3 = 5-4-1=0$ | $Z(0)$.

1 $f(x_1,x_2,x_3) = [(x_3+1)/3]$

$x_4 = [(x_3+1)/3]$

$x_4 \le (x_3+1)/3 < x_4+1 \quad |\cdot 3$

$3x_4 \le x_3+1 < 3x_4+3 \quad |-1$

$3x_4-1 \le x_3 < 3x_4+2$

$x_3+1 \le (3x_4+2)$

Запишемо оператором через мінімізацію:

$\mu_{x_4}((x_3+1)\le(3x_4+2) = \mu_{x_4}(x_3+1 \dot{-} 3x_4+2 = 0)$

$M(S^3(\dot{-}, S^2(s, I_3^4), S^2(s, S^2(s, S^3(\oplus, I_4^4, S^3(\oplus, I_4^4, I_4^4))))))$

де $\oplus$ та $\otimes$ були визначені вище, а $\dot{-}$: $R(I_1^1, S^2(R(S^2(0, I_1^1)), I_1^1))$

$f(x_1,x_2) = x_1 \dot{-} x_2$,

2. ..

3. $\min(x+z, y)$

1 2 3 4 5
x y z 0 0

1) $J(2,3,5)$
2) $Z(0)$
3) $S(3)$
4) $J(0,0,1)$
5) $J(0,4,10)$
6) $J(1,4,9)$
7) $S(4)$
8) $J(0,0,1)$
9) $T(1,0)$

4. $f(x) = sg([x/3])$

$q_0 1 \to q_1 1 R \quad 3C^4(\overset{1}{\widehat{0,1}}, \overset{4}{\widehat{1,1}}) + 2 = 3 \cdot 16 + 2 = 50$

$q_1 1 \to q_2 1 R \quad 3C^4(\overset{4}{\widehat{1,1}}, \overset{8}{\widehat{2,1}}) + 2 = 3 \cdot 82 + 2 = 248$

$q_2 1 \to q_3 1 L \quad 3C^4(\overset{8}{\widehat{2,1}}, \overset{13}{\widehat{3,1}}) + 1 = 3 \cdot 239 + 1 = 718$

$q_3 1 \to q_3 \lambda L \quad 3C^4(\overset{13}{\widehat{3,1}}, \overset{9}{\widehat{3,0}}) + 1 = 3 \cdot 266 + 1 = 799$

$q_3 \lambda \to q^* \lambda \quad 3C^4(\overset{9}{\widehat{3,0}}, \overset{14}{\widehat{4,0}}) = 3 \cdot 285 = 855$

$q_0 \lambda \to q^* \lambda \quad 3C^4(\overset{0}{\widehat{0,0}}, \overset{14}{\widehat{4,0}}) = 3 \cdot 105 = 315$

$q_1 \lambda \to q_3 \lambda L \quad 3C^4(\overset{2}{\widehat{1,0}}, \overset{9}{\widehat{3,0}}) + 1 = 3 \cdot 68 + 1 = 205$

$q_2 \lambda \to q_3 \lambda L \quad 3C^4(\overset{5}{\widehat{2,0}}, \overset{9}{\widehat{3,0}}) + 1 = 3 \cdot 110 + 1 = 331.$

$Q = \{\overset{0}{q_0}, \overset{1}{q_1}, \overset{2}{q_2}, \overset{3}{q_3}, \overset{4}{\underset{(q^*)}{q_4}}\}, \quad \Gamma = \{\overset{\lambda}{a_0}, \overset{1}{a_1}\}$

$\rho(M) = 2^{50} + 2^{248} + 2^{718} + 2^{755} + 2^{855} + 2^{315} + 2^{205} + 2^{331}$