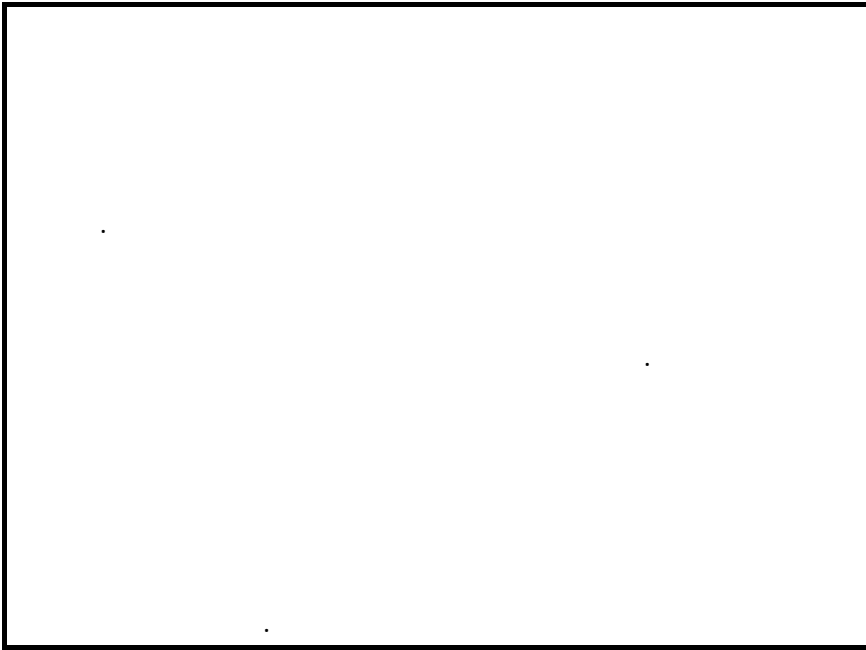
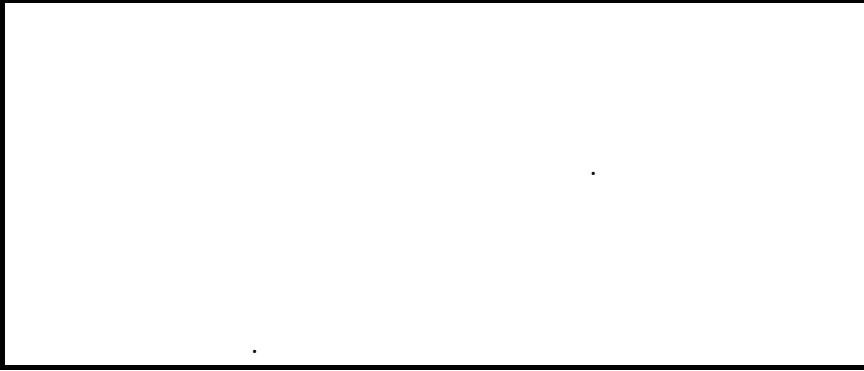


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⋮

⋮

E₁

E₂

E₃

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E₅

E₆

E₇

E₈

E₉

E₁₀

E₁₁
 E₁₂
 E_I
 E_{II}

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	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂	E _I	E _{II}
E ₁	0	E _{1,2}	0	0	0	0	0	0	0	0	0	0	0	0
E ₂	0	0	E _{2,3}	0	0	0	0	0	0	0	0	0	0	0
E ₃	0	0	0	E _{3,4}	0	0	0	0	0	0	0	0	E _{3,I}	0
E ₄	0	0	0	0	E _{4,5}	0	0	0	0	0	0	0	E _{4,I}	0
E ₅	0	0	0	0	0	E _{5,6}	0	0	0	0	0	0	E _{5,I}	0
E ₆	0	0	0	0	0	0	E _{7,8}	0	0	0	0	0	E _{6,I}	E _{6,II}
E ₇	0	0	0	0	0	0	0	E _{7,8}	0	0	0	0	E _{7,I}	E _{7,II}
E ₈	0	0	0	0	0	0	0	0	E _{8,9}	0	0	0	E _{8,I}	E _{8,II}
E ₉	0	0	0	0	0	0	0	0	0	E _{9,10}	0	0	E _{9,I}	E _{9,II}
E ₁₀	0	0	0	0	0	0	0	0	0	0	E _{10,11}	0	E _{10,I}	E _{10,II}
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	E _{11,12}	E _{11,I}	E _{11,II}
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0	E _{12,I}	E _{12,II}
E _I	0	0	0	0	0	0	0	0	0	0	0	0	1	0
E _{II}	0	0	0	0	0	0	0	0	0	0	0	0	0	1

E₉ E₈ E₇ E₆ E₅ E₄ E₃ E₂ E₁

E_I E_{II}

E₁₂ E₁₁ E₁₀

E₁₂ E₁₁ E₁₀ E₉ E₈ E₇ E₆ E₅ E₄ E₃ E₂ E₁

Q

R

: Q

$Q^0 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	1	0	0	0	0	0	0	0	0	0	0	0
E ₂	0	1	0	0	0	0	0	0	0	0	0	0
E ₃	0	0	1	0	0	0	0	0	0	0	0	0
E ₄	0	0	0	1	0	0	0	0	0	0	0	0
E ₅	0	0	0	0	1	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	1	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	1	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	1	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	1	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	1	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	1	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	1

: Q

$Q^1 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	P _{1,2}	0	0	0	0	0	0	0	0	0	0
E ₂	0	0	P _{2,3}	0	0	0	0	0	0	0	0	0
E ₃	0	0	0	P _{3,4}	0	0	0	0	0	0	0	0
E ₄	0	0	0	0	P _{4,5}	0	0	0	0	0	0	0
E ₅	0	0	0	0	0	P _{5,6}	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	P _{7,8}	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	P _{7,8}	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	P _{8,9}	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	P _{9,10}	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	P _{10,11}	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	P _{11,12}
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

: Q

$Q^2 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	P _{1.2} , P _{2.3}	0	0	0	0	0	0	0	0	0
E ₂	0	0	0	P _{2.3} , P _{3.4}	0	0	0	0	0	0	0	0
E ₃	0	0	0	0	P _{3.4} , P _{4.5}	0	0	0	0	0	0	0
E ₄	0	0	0	0	0	P _{4.5} , P _{5.6}	0	0	0	0	0	0
E ₅	0	0	0	0	0	0	P _{5.6} , P _{7.8}	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	P _{7.8} , P _{7.8}	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	P _{7.8} , P _{8.9}	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	P _{8.9} , P _{9.10}	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	P _{9.10} , P _{10.11}	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	P _{10.11} , P _{11.12}
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

: Q

$Q^3 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	P _{1.2} , P _{2.3} , P _{3.4}	0	0	0	0	0	0	0	0
E ₂	0	0	0	0	P _{2.3} , P _{3.4} , P _{4.5}	0	0	0	0	0	0	0
E ₃	0	0	0	0	0	P _{3.4} , P _{4.5} , P _{5.6}	0	0	0	0	0	0
E ₄	0	0	0	0	0	0	P _{4.5} , P _{5.6} , P _{6.7}	0	0	0	0	0
E ₅	0	0	0	0	0	0	0	P _{5.6} , P _{6.7} , P _{7.8}	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	P _{6.7} , P _{7.8} , P _{8.9}	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	P _{7.8} , P _{8.9} , P _{9.10}	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	P _{8.9} , P _{9.10} , P _{10.11}	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	P _{9.10} , P _{10.11} , P _{11.12}
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

: Q
 $Q^4 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	P _{1,2} , P _{2,3} , P _{3,4} , P _{4,5}	0	0	0	0	0	0	0
E ₂	0	0	0	0	0	P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6}	0	0	0	0	0	0
E ₃	0	0	0	0	0	0	P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7}	0	0	0	0	0
E ₄	0	0	0	0	0	0	0	P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8}	0	0	0	0
E ₅	0	0	0	0	0	0	0	0	P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9}	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10}	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11}	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	P _{8,9} , P _{9,10} , P _{10,11} , P _{11,12}
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

: Q

$Q^5 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	P _{1,2} , P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6}	0	0	0	0	0	0
E ₂	0	0	0	0	0	0	P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7}	0	0	0	0	0
E ₃	0	0	0	0	0	0	0	P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8}	0	0	0	0
E ₄	0	0	0	0	0	0	0	0	P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9}	0	0	0
E ₅	0	0	0	0	0	0	0	0	0	P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10}	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11}	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11} , P _{11,12}
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

Q

Q⁶ =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	P _{1,2} , P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7}	0	0	0	0	0
E ₂	0	0	0	0	0	0	0	P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8}	0	0	0	0
E ₃	0	0	0	0	0	0	0	0	P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{6,7} , P _{8,9}	0	0	0
E ₄	0	0	0	0	0	0	0	0	0	P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10}	0	0
E ₅	0	0	0	0	0	0	0	0	0	0	P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11}	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11} , P _{11,12}
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

:

Q⁷ =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	0	P _{1,2} , P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8}	0	0	0	0
E ₂	0	0	0	0	0	0	0	0	P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{7,8} , P _{8,9}	0	0	0
E ₃	0	0	0	0	0	0	0	0	0	P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{6,7} , P _{8,9} , P _{9,10}	0	0
E ₄	0	0	0	0	0	0	0	0	0	0	P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11}	0
E ₅	0	0	0	0	0	0	0	0	0	0	0	P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11} , P _{11,12}
E ₆	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

:

$Q^8 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	0	0	P _{1,2} , P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9}	0	0	0
E ₂	0	0	0	0	0	0	0	0	0	P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10}	0	0
E ₃	0	0	0	0	0	0	0	0	0	0	P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{6,7} , P _{8,9} , P _{9,10} , P _{10,11}	0
E ₄	0	0	0	0	0	0	0	0	0	0	0	P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11} , P _{11,12}
E ₅	0	0	0	0	0	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

:

$Q^9 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	0	0	0	P _{1,2} , P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10}	0	0
E ₂	0	0	0	0	0	0	0	0	0	0	P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11}	0
E ₃	0	0	0	0	0	0	0	0	0	0	0	P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{6,7} , P _{8,9} , P _{9,10} , P _{10,11} , P _{11,12}
E ₄	0	0	0	0	0	0	0	0	0	0	0	0
E ₅	0	0	0	0	0	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

$$Q^{10} =$$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	0	0	0	0	P _{1,2} , P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11}	0
E ₂	0	0	0	0	0	0	0	0	0	0	0	P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11} , P _{11,12}
E ₃	0	0	0	0	0	0	0	0	0	0	0	0
E ₄	0	0	0	0	0	0	0	0	0	0	0	0
E ₅	0	0	0	0	0	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

$$Q^{11} =$$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	0	0	0	0	0	P _{1,2} , P _{2,3} , P _{3,4} , P _{4,5} , P _{5,6} , P _{6,7} , P _{7,8} , P _{8,9} , P _{9,10} , P _{10,11} , P _{11,12}
E ₂	0	0	0	0	0	0	0	0	0	0	0	0
E ₃	0	0	0	0	0	0	0	0	0	0	0	0
E ₄	0	0	0	0	0	0	0	0	0	0	0	0
E ₅	0	0	0	0	0	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

$$Q^{12} =$$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₂	0	0	0	0	0	0	0	0	0	0	0	0
E ₃	0	0	0	0	0	0	0	0	0	0	0	0
E ₄	0	0	0	0	0	0	0	0	0	0	0	0
E ₅	0	0	0	0	0	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

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E_1	E_2	E_3	E_4	E_5	E_6	E_7	E_8	E_9	E_{10}	E_{11}	E_{12}
1	$P_{1,2}$	$P_{1,2}, P_{2,3}$	$P_{1,2}, P_{2,3}, P_{3,4}$	$P_{1,2}, P_{2,3}, P_{3,4}, P_{4,5}$	$P_{1,2}, P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}$	$P_{1,2}, P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}$	$P_{1,2}, P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}$	$P_{1,2}, P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}$	$P_{1,2}, P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}$	$P_{1,2}, P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}$	$P_{1,2}, P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$
0	1	$P_{2,3}$	$P_{2,3}, P_{3,4}, P_{4,5}$	$P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}$	$P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}$	$P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}$	$P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}$	$P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}$	$P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$	$P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$	$P_{2,3}, P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$
0	0	1	$P_{3,4}$	$P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}$	$P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}$	$P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}$	$P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}$	$P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}$	$P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$	$P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$	$P_{3,4}, P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$
0	0	0	1	$P_{4,5}$	$P_{4,5}, P_{5,6}, P_{6,7}$	$P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}$	$P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}$	$P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}$	$P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}$	$P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$	$P_{4,5}, P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$
0	0	0	0	1	$P_{5,6}$	$P_{5,6}, P_{6,7}, P_{7,8}$	$P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}$	$P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}$	$P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}$	$P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$	$P_{5,6}, P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$
0	0	0	0	0	1	$P_{6,7}$	$P_{6,7}, P_{7,8}, P_{8,9}$	$P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}$	$P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}$	$P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$	$P_{6,7}, P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$
0	0	0	0	0	0	1	$P_{7,8}$	$P_{7,8}, P_{8,9}, P_{9,10}$	$P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}$	$P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$	$P_{7,8}, P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$
0	0	0	0	0	0	0	1	$P_{8,9}$	$P_{8,9}, P_{9,10}, P_{10,11}$	$P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$	$P_{8,9}, P_{9,10}, P_{10,11}, P_{11,12}$
0	0	0	0	0	0	0	0	1	$P_{9,10}$	$P_{9,10}, P_{10,11}, P_{11,12}$	$P_{9,10}, P_{10,11}, P_{11,12}$
0	0	0	0	0	0	0	0	0	1	$P_{10,11}, P_{11,12}$	$P_{10,11}, P_{11,12}$
0	0	0	0	0	0	0	0	0	0	1	$P_{11,12}$

:

:

799	665	94-95
907	602	95-96
675	538	96-97
692	527	97-98
721	531	98-99
3794	2863	

:

:

$$D = \frac{2863}{5} = 573$$

:

$$S = \frac{3794}{5} = 759$$

:

:

$$d = \frac{D}{S} \times 100 = \frac{573}{759} \times 100 = 75 \%$$

:

:

$$569 = 0.75 \times 759$$

:

$$190 = 569 - 379$$

12

9

$\frac{3}{4}$

$\frac{3}{4}$

$\frac{1}{4}$

$\frac{1}{4}$

$$P_{1,1} = P_{1,2} = P_{2,3} = P_{3,4} = P_{4,5} = P_{5,6} = 1$$

$$P_{6,7} = P_{6,8} = P_{8,9} = P_{9,10} = P_{10,11} = P_{11,12} = \frac{1}{4}$$

$$P_{6,7} = P_{6,11} = P_{8,11} = P_{9,11} = P_{10,11} = P_{11,11} = P_{12,11} = \frac{3}{4}$$

$$P_{12,1} = \frac{1}{4}$$

:

M =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂	E _I	E _{II}
E ₁	0	1	0	0	0	0	0	0	0	0	0	0	0	0
E ₂	0	0	1	0	0	0	0	0	0	0	0	0	0	0
E ₃	0	0	0	1	0	0	0	0	0	0	0	0	0	0
E ₄	0	0	0	0	1	0	0	0	0	0	0	0	0	0
E ₅	0	0	0	0	0	1	0	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	1/4	0	0	0	0	0	0	3/4
E ₇	0	0	0	0	0	0	0	1/4	0	0	0	0	0	3/4
E ₈	0	0	0	0	0	0	0	0	1/4	0	0	0	0	3/4
E ₉	0	0	0	0	0	0	0	0	0	1/4	0	0	0	3/4
E ₁₀	0	0	0	0	0	0	0	0	0	0	1/4	0	0	3/4
E ₁₁	0	0	0	0	0	0	0	0	0	0	1	1/4	1	3/4
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0	1/4	3/4
E _I	0	0	0	0	0	0	0	0	0	0	1	1	1	0
E _{II}	0	0	0	0	0	0	0	0	0	0	0	0	0	1

O,R,I,Q

Q R Q

:

Q⁰ =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	1	0	0	0	0	0	0	0	0	0	0	0
E ₂	0	1	0	0	0	0	0	0	0	0	0	0
E ₃	0	0	1	0	0	0	0	0	0	0	0	0
E ₄	0	0	0	1	0	0	0	0	0	0	0	0
E ₅	0	0	0	0	1	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	1	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	1	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	1	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	1	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	1	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	1	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	1

:

Q¹ =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	1	0	0	0	0	0	0	0	0	0	0
E ₂	0	0	1	0	0	0	0	0	0	0	0	0
E ₃	0	0	0	1	0	0	0	0	0	0	0	0
E ₄	0	0	0	0	1	0	0	0	0	0	0	0
E ₅	0	0	0	0	0	1	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	1/4	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	1/4	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	1/4	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	1/4	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	1/4	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	1/4
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

$Q^2 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	1	0	0	0	0	0	0	0	0	0
E ₂	0	0	0	1	0	0	0	0	0	0	0	0
E ₃	0	0	0	0	1	0	0	0	0	0	0	0
E ₄	0	0	0	0	0	1	0	0	0	0	0	0
E ₅	0	0	0	0	0	0	1/4	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	1/16	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	1/16	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	1/16	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	1/16	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	1/16
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

$Q^3 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	1	0	0	0	0	0	0	0	0
E ₂	0	0	0	0	1	0	0	0	0	0	0	0
E ₃	0	0	0	0	0	1	0	0	0	0	0	0
E ₄	0	0	0	0	0	0	1/4	0	0	0	0	0
E ₅	0	0	0	0	0	0	0	1/16	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	1/64	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	1/256	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	1/1024	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	1/4096
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

$Q^4 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	1	0	0	0	0	0	0	0
E ₂	0	0	0	0	0	1	0	0	0	0	0	0
E ₃	0	0	0	0	0	0	1/4	0	0	0	0	0
E ₄	0	0	0	0	0	0	0	1/16	0	0	0	0
E ₅	0	0	0	0	0	0	0	0	1/64	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	1/256	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	1/1024	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	1/4096
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

$Q^5 =$

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂

E ₁	0	0	0	0	0	1	0	0	0	0	0	0
E ₂	0	0	0	0	0	0	1/4	0	0	0	0	0
E ₃	0	0	0	0	0	0	0	1/16	0	0	0	0
E ₄	0	0	0	0	0	0	0	0	1/64	0	0	0
E ₅	0	0	0	0	0	0	0	0	0	1/256	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	1/1024	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	1/4096
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

Q⁶ =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	1/4	0	0	0	0	0
E ₂	0	0	0	0	0	0	0	1/16	0	0	0	0
E ₃	0	0	0	0	0	0	0	0	1/64	0	0	0
E ₄	0	0	0	0	0	0	0	0	0	1/256	0	0
E ₅	0	0	0	0	0	0	0	0	0	0	1/1024	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	1/4096
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

Q⁷ =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	0	1/16	0	0	0	0
E ₂	0	0	0	0	0	0	0	0	1/64	0	0	0
E ₃	0	0	0	0	0	0	0	0	0	1/256	0	0
E ₄	0	0	0	0	0	0	0	0	0	0	1/1024	0
E ₅	0	0	0	0	0	0	0	0	0	0	0	1/4096
E ₆	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

Q⁸ =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
--	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	-----------------	-----------------	-----------------

E ₁	0	0	0	0	0	0	0	0	0	1/64	0	0	0
E ₂	0	0	0	0	0	0	0	0	0	0	1/256	0	0
E ₃	0	0	0	0	0	0	0	0	0	0	0	1/1024	0
E ₄	0	0	0	0	0	0	0	0	0	0	0	0	1/4096
E ₅	0	0	0	0	0	0	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0	0

Q⁹ =

E ₁	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	0	0	0	1/256	0	0
E ₂	0	0	0	0	0	0	0	0	0	0	1/1024	0
E ₃	0	0	0	0	0	0	0	0	0	0	0	1/4096
E ₄	0	0	0	0	0	0	0	0	0	0	0	0
E ₅	0	0	0	0	0	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

Q¹⁰ =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	0	0	0	0	1/1024	0
E ₂	0	0	0	0	0	0	0	0	0	0	0	1/4096
E ₃	0	0	0	0	0	0	0	0	0	0	0	0
E ₄	0	0	0	0	0	0	0	0	0	0	0	0
E ₅	0	0	0	0	0	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

Q¹¹ =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	0	0	0	0	0	0	0	0	0	0	0	1/4096
E ₂	0	0	0	0	0	0	0	0	0	0	0	0
E ₃	0	0	0	0	0	0	0	0	0	0	0	0
E ₄	0	0	0	0	0	0	0	0	0	0	0	0
E ₅	0	0	0	0	0	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

Q¹² =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
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E ₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₂	0	0	0	0	0	0	0	0	0	0	0	0
E ₃	0	0	0	0	0	0	0	0	0	0	0	0
E ₄	0	0	0	0	0	0	0	0	0	0	0	0
E ₅	0	0	0	0	0	0	0	0	0	0	0	0
E ₆	0	0	0	0	0	0	0	0	0	0	0	0
E ₇	0	0	0	0	0	0	0	0	0	0	0	0
E ₈	0	0	0	0	0	0	0	0	0	0	0	0
E ₉	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₀	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₁	0	0	0	0	0	0	0	0	0	0	0	0
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	0

:

$$N = Q^0 + Q^1 + Q^2 + Q^3 + Q^4 + Q^5 + Q^6 + Q^7 + Q^8 + Q^9 + Q^{10} + Q^{11} + Q^{12}$$

:

N =

	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂
E ₁	1	1	1	1	1	1	1/4	1/16	1/64	1/256	1/1024	1/4096
E ₂	0	1	1	1	1	1	1/4	1/16	1/64	1/256	1/1024	1/4096
E ₃	0	0	1	1	1	1	1/4	1/16	1/64	1/256	1/1024	1/4096
E ₄	0	0	0	1	1	1	1/4	1/16	1/64	1/256	1/1024	1/4096
E ₅	0	0	0	0	1	1	1/4	1/16	1/64	1/256	1/1024	1/4096
E ₆	0	0	0	0	0	1	1/4	1/16	1/64	1/256	1/1024	1/4096
E ₇	0	0	0	0	0	0	1	1/4	1/16	1/64	1/256	0
E ₈	0	0	0	0	0	0	0	1	1/4	1/16	1/64	1/256
E ₉	0	0	0	0	0	0	0	0	1	1/4	1/16	1/64
E ₁₀	0	0	0	0	0	0	0	0	0	1	1/4	1/16
E ₁₁	0	0	0	0	0	0	0	0	0	0	1	1/4
E ₁₂	0	0	0	0	0	0	0	0	0	0	0	1

:

t₁ = 6.33	t₂ = 5.33	t₃ = 4.33	t₄ = 3.33
t₅ = 2.33	t₆ = 1.33	t₇ = 1.33	t₈ = 1.33
t₉ = 1.33	t₁₀ = 1.32	t₁₁ = 1.25	t₁₂ = 1

:

19

29

N
:

R

:

-1

-2

29

0.000061

0.9999389

-3

-4

.	-	:1983	.	-	1
.	-		:1987		2
-			:1987		3
	-				4
			. 1994 - 1995		
	-				5
			. 1995 - 1996		
	-				6
			. 1996 - 1997		
	-				7
			. 1997 - 1998		
	-				8
			. 1998 - 1999		

- 1 – DERVUTSIORIS KOSTAS. N 1981: Operations Management Auckland. Mc. Graw Hill International Book Company .
- 2 – ISAACSON. D. and MADSON 1976: Markov chains Theory and Application (New Yor;) John Wiley ands sons.
- 3 – LEVIN R. I. & DESJARDIN R. B. 1971: Theory of Came and strategie scronton Texbook.
- 4 – RICHARD I. LEVIN DAVID S. RUBIN. JOELP. STINSON 1986: Quantitative approaches to Management. McGRAW – HILL COMPANY .

-
- : -
- 1 – А. Гильберт 1988. Как работать с матрицами .
 - 2 – В. В. ГНЕДЕНКО 1988. Курс теории вероятностей, москва «наука» .
 - 3 – И. Н. КОВАЛЕНКО, А. А. РИЛИПОВА 1982: Теория Вероятностей, и математическая статистика, москва «вышая школа».
 - 4 – П. Ланкастар 1992 : Теория Матриц, Москва «наука» главная редакция физико-математической литературы .
- : -

- 1 – A. Paquier: Elements de calcul des Probabilites et théorie des sondages dunod 1969.
- 2 – J. Mothes: Prévisions et decisions statistiques dans l'entrepris Dunod 1968.
- 3 – Germain Kreweras: Graphes, chaines de markôve Precis Dalloz 1972.
- 4 – M. K. Star: Le choix des produits et la theorie de la decision dunod 1965' .

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