

Imię Nazwisko szkoła nr miejscowość.....

1a) $C \left\{ \underbrace{\left\{ \frac{9-i}{2} \right\}_{i=1}^7 \left\{ \frac{j+1}{4} \right\}_{j=1}^4}_3 \right\}$ ma ... cyfr b) $C \left\{ \underbrace{\left\{ \frac{9+i}{2} \right\}_{i=1}^7 \left\{ \frac{13}{4} \right\}}_3 \right\}$ ma ... cyfr c) $C \left\{ \underbrace{\left\{ \frac{12+i}{i} \right\}_{i=1}^7 \left\{ \frac{j+k}{3} \right\}_{j=1}^2}_k \right\}_{k=1}$ ma ... cyfr

2. Zakoduj ciągi:

a) { 1, 1, 1, 9, 9, 2, 2, 2, 9, 9, 3, 3, 3, 9, 9, 4, 4, 4, 9, 9 }

b) { 1, 1, 1, 1, 9, 8, 8, 2, 2, 2, 2, 9, 8, 8, 3, 3, 3, 3, 9, 8, 8, 4, 4, 4, 4, 9, 8, 8, 5, 5, 5, 5, 9, 8, 8 }

c) { 1, 9, 9, 9, 2, 2, 9, 9, 9, 3, 3, 3, 9, 9, 9, 4, 4, 4, 4, 9, 9, 9, 5, 5, 5, 5, 5, 9, 9, 9 }

d) { 1, 1, 11, 2, 2, 2, 12, 3, 3, 3, 3, 13, 4, 4, 4, 4, 4, 14, 5, 5, 5, 5, 5, 5, 15 }

3a) $\left\{ \underbrace{\left\{ \frac{15-i}{2} \right\}_{i=1}^3 \left\{ \frac{3+j}{3} \right\}_{j=1}^2}_2 \right\}$ ma ... wyrazów: $w_{11} = \dots$ $w_{12} = \dots$ $w_{13} = \dots$

3b) $\left\{ \underbrace{\left\{ \frac{2+i}{3} \right\}_{i=1}^2 \left\{ \frac{123}{2} \right\}}_{i=1}^2 \left\{ \frac{2+j}{j} \right\}_{j=1}^4 \left\{ \frac{7-k}{3} \right\}_{k=1}^5 \right\}$ ma ... wyrazów: $w_{11} = \dots$ $w_{12} = \dots$ $w_{13} = \dots$

4a) Oblicz sumę $S \left\{ \underbrace{\left\{ \frac{2+i}{3} \right\}_{i=1}^3 \left\{ \frac{9-j}{2} \right\}_{j=1}^4}_3 \right\} = \dots$

4b) Oblicz sumę $S \left\{ \underbrace{\left\{ \frac{2+i}{3} \right\}_{i=1}^3 \left\{ \frac{9-j}{2} \right\}_{j=1}^4}_3 \right\} = \dots$

4c) Oblicz sumę $S \left\{ \underbrace{\left\{ \frac{2+i}{3} \right\}_{i=1}^3 \left\{ \frac{9-j}{2} \right\}_{j=1}^4}_k \right\}_{k=1}^4 = \dots$

5 a) Oblicz różnicę liczb: $S \left\{ \underbrace{\left\{ \frac{3+i}{5} \right\}_{i=1}^3 \left\{ \frac{9-j}{3} \right\}_{j=1}^4}_4 \right\} - S \left\{ \underbrace{\left\{ \frac{1+i}{5} \right\}_{i=1}^3 \left\{ \frac{9-j}{3} \right\}_{j=1}^4}_4 \right\} = \dots$

5 b) Oblicz różnicę liczb: $S \left\{ \underbrace{\left\{ \frac{3 \cdot i + 5}{5} \right\}_{i=1}^3 \left\{ \frac{9 + j \cdot 2}{3} \right\}_{j=1}^4}_k \right\}_{k=1}^3 - S \left\{ \underbrace{\left\{ \frac{2 \cdot i + 4}{5} \right\}_{i=1}^3 \left\{ \frac{8 + j \cdot 2}{3} \right\}_{j=1}^4}_k \right\}_{k=1}^3 = \dots$

6. Oblicz: a) $S \left\{ \frac{k+9}{5} \frac{10-k}{5} \right\}_{k=3}^7 = \dots$ b) $S \left\{ \frac{k+9}{5} \frac{10-k}{5} \right\}_{k=3}^7 = \dots$ c) $S \left\{ \frac{2 \cdot k + 9}{5} \frac{9-k}{5} \right\}_{k=3}^7 = \dots$

7. Oblicz: a) $S \left\{ \frac{10^k}{9} \right\}_{k=2}^4 = \dots$ b) $S \left\{ \frac{1}{8 \cdot 10^k} \right\}_{k=2}^4 = \dots$ c) $S \left\{ \frac{1}{10^k} \right\}_{k=2}^4 = \dots$ d) $S \left\{ \frac{4}{10^k} \right\}_{k=2}^4 = \dots$