

Zadatak 10. Zapiši brojeve $101\ 110_{(2)}$, $2102_{(3)}$, $3220_{(4)}$, $11\ 011_{(5)}$ u sustavu s bazom 8.

Rješenje.

Osim u slučaju prijelaza iz binarne baze, ostale konverzije radimo preko dekadskog sustava.

1) $101\ 110_{(2)} = 56_{(8)}$.

2) $2102_{(3)}$

$$\begin{array}{r|l|l|l|l|} 3 & 2 & 1 & 0 & 2 \\ \hline & 2 & 7 & 21 & 65 \end{array} \quad \begin{array}{r|l|l|l|} 8 & 65 & 8 & 1 \\ \hline & 1 & 0 & 1 \end{array}$$

$$2102_{(3)} = 65 = 101_{(8)}.$$

3) $3220_{(4)}$

$$\begin{array}{r|l|l|l|l|} 4 & 3 & 2 & 2 & 0 \\ \hline & 3 & 14 & 58 & 232 \end{array} \quad \begin{array}{r|l|l|l|} 8 & 232 & 29 & 3 \\ \hline & 0 & 5 & 3 \end{array}$$

$$3220_{(4)} = 232 = 350_{(8)}.$$

Ovdje konverziju možemo vršiti lakše, preko binarne baze! Jednoj znamenki u sustavu s bazom 4 odgovaraju dvije znamenke u binarnoj bazi:

$$3220_{(4)} = 11\ 10\ 10\ 00_{(2)} = 11\ 101\ 000_{(2)} = 350_{(8)}$$

4) $11\ 011_{(5)}$

$$\begin{array}{r|l|l|l|l|} 5 & 1 & 1 & 0 & 1 & 1 \\ \hline & 1 & 6 & 30 & 151 & 756 \end{array} \quad \begin{array}{r|l|l|l|} 8 & 756 & 94 & 11 & 1 \\ \hline & 4 & 6 & 3 & 1 \end{array}$$

$$11\ 011_{(5)} = 756 = 1364_{(8)}.$$