

Zadatak 5. Zapiši dane dekadске brojeve u sustavima s bazama 2, 5 i 12:
11, 33, 100, 222, 1001.

Rješenje.

1) U binarnom sustavu:

$$11 = 8 + 2 + 1 = 2^3 + 2 + 1 = 1011_{(2)}.$$

$$33 = 32 + 1 = 2^5 + 1 = 100001_{(2)}.$$

$$\begin{array}{r|c|c|c|c|c|c|c|c|} 2 & 100 & 50 & 25 & 12 & 6 & 3 & 1 & \\ \hline & 0 & 0 & 1 & 0 & 0 & 1 & 1 & \end{array}$$

$$100 = 1\ 100\ 100_{(2)}.$$

$$\begin{array}{r|c|c|c|c|c|c|c|c|c|} 2 & 222 & 111 & 55 & 27 & 13 & 6 & 3 & 1 & \\ \hline & 0 & 1 & 1 & 1 & 1 & 0 & 1 & 1 & \end{array}$$

$$222 = 11\ 011\ 110_{(2)}$$

$$\begin{array}{r|c|c|c|c|c|c|c|c|c|c|} 2 & 1001 & 500 & 250 & 125 & 62 & 31 & 15 & 7 & 3 & 1 & \\ \hline & 1 & 0 & 0 & 1 & 0 & 1 & 1 & 1 & 1 & 1 & \end{array}$$

$$1001 = 1\ 111\ 101\ 001_{(2)}$$

2) U sustavu s bazom 5:

$$11 = 2 \cdot 5 + 1 = 21_{(5)}.$$

$$33 = 5^2 + 5 + 3 = 113_{(5)}.$$

$$100 = 4 \cdot 5^2 = 400_{(5)}.$$

$$\begin{array}{r|c|c|c|c|c|} 5 & 222 & 44 & 8 & 1 & \\ \hline & 2 & 4 & 3 & 1 & \end{array} \quad 222 = 1342_{(5)}$$

$$\begin{array}{r|c|c|c|c|c|} 5 & 1001 & 200 & 40 & 8 & 1 & \\ \hline & 1 & 0 & 0 & 3 & 1 & \end{array} \quad 1001 = 13001_{(5)}$$

3) U sustavu s bazom 12:

$$11 = B_{(12)}.$$

$$33 = 2 \cdot 12 + 9 = 29_{(12)}.$$

$$100 = 8 \cdot 12 + 4 = 84_{(12)}.$$

$$\begin{array}{r|c|c|c|c|} 12 & 222 & 18 & 1 & \\ \hline & 6 & 6 & 1 & \end{array} \quad 222 = 166_{(12)}.$$

$$\begin{array}{r|c|c|c|c|} 12 & 1001 & 83 & 6 & \\ \hline & 5 & 11 & 6 & \end{array} \quad 1001 = 6B5_{(12)}.$$