

## Sistemet numerike

Sistemi i numrave Oktal ka bazen 8 (B=8), sepse eshte sistem i kombinuar nga keto numra: 0,1,2,3,4,5,6,7.

Tabela e sistemeve numerike: *binar, oktal, decimal, heksadecimal.*

<b>BINAR</b>	<b>OKTAL</b>	<b>DECIMAL</b>	<b>HEKSADECIMAL</b>
0000	0	0	0
0001	1	1	1
0010	2	2	2
0011	3	3	3
0100	4	4	4
0101	5	5	5
0110	6	6	6
0111	7	7	7
1000	10	8	8
1001	11	9	9
1010	12	10	A
1011	13	11	B
1100	14	12	C
1101	15	13	D
1110	16	14	E
<b>BAZA = 2</b>	<b>BAZA = 8</b>	<b>BAZA = 10</b>	<b>BAZA = 16</b>

**Ushtrim:** Te shnderohen numrat Oktal ne ekuivalentet e tyre Decimal dhe anasjelltas:

- a) 37
- b) 39
- c) 45
- d) 365
- e) 542

a) Oktal -> Decimal

$$(37)_8 = (3 \cdot 8^1) + (7 \cdot 8^0) = 24 + 7 = (31)_{10}$$

*Decimal -> Oktal*

$$31/8 \rightarrow 3 \rightarrow \text{mbetja} = 7 \text{ sepse } (31 - 24 = 7)$$

$$3/8 \rightarrow 0 \rightarrow \text{mbetja} = 3 \text{ sepse } (3 - 0 = 3)$$

**(37)<sub>10</sub>**

b) Oktal -> Decimal

$$(39)_8 = (3 \cdot 8^1) + (9 \cdot 8^0) = 24 + 9 = (33)_{10}$$

*Decimal -> Oktal*

$$33/8 \rightarrow 3 \rightarrow \text{mbetja} = 9 \text{ sepse } (33 - 24 = 9)$$

$$3/8 \rightarrow 0 \rightarrow \text{mbetja} = 3 \text{ sepse } (3 - 0 = 3)$$

**(39)<sub>10</sub>**

c) Oktal -> Decimal

$$(45)_8 = (4 \cdot 8^1) + (5 \cdot 8^0) = 32 + 5 = (37)_{10}$$

*Decimal -> Oktal*

$$37/8 \rightarrow 4 \rightarrow \text{mbetja} = 5 \text{ sepse } (37 - 32 = 5)$$

$$4/8 \rightarrow 0 \rightarrow \text{mbetja} = 4 \text{ sepse } (4 - 0 = 4)$$

**(45)<sub>10</sub>**

**Ushtrimi d) dhe e) -> Detyre shtepie**

**Ushtrim:** Te shnderohen numrat Hexadecimal ne ekuivalentet e tyre Decimal dhe anasjelltas:

- a) 7E
- b) 1A3
- c) 4D6
- d) 1F4

**a) Hexadecimal -> Decimal**

$$(7E)_{16} = (7 \cdot 16^1) + (E \cdot 16^0) = 112 + 14 = (126)_{10}$$

**Decimal -> Hexadecimal**

$$126/16 \rightarrow 7 \text{ mb} = 126 - 112 = 14$$

14 ose E

$$(7E)_{16}$$

**b) Hexadecimal -> Decimal**

$$(1A3)_{16} = (1 \cdot 16^2) + (A \cdot 16^1) + (3 \cdot 16^0) = 256 + 160 + 3 = (419)_{10}$$

**Decimal -> Hexadecimal**

$$419/256 \rightarrow 1 \text{ mb} = 419 - 256 = 163$$

$$163/16 \rightarrow 10 \text{ ose A mb} = 163 - 160 = 3$$

3

$$(1A3)_{16}$$

**c) Hexadecimal -> Decimal**

$$(4D6)_{16} = (4 \cdot 16^2) + (D \cdot 16^1) + (6 \cdot 16^0) = 1024 + 208 + 6 = (1238)_{10}$$

**Decimal -> Hexadecimal**

$$1238/256 \rightarrow 4 \text{ mb} = 1238 - 1024 = 214$$

$$214/16 \rightarrow 13 \text{ ose D mb} = 214 - 208 = 6$$

6

$$(4D6)_{16}$$

**d) Hexadecimal -> Decimal**

$$(1F4)_{16} = (1 * 16^2) + (F * 16^1) + (4 * 16^0) = 256 + 240 + 4 = (500)_{10}$$

**Decimal -> Hexadecimal**

$$500 / 256 \rightarrow 1 \text{ mb} = 500 - 256 = 244$$

$$244 / 16 \rightarrow 15 \text{ ose F mb} = 244 - 240 = 4$$

4

**(1F4)<sub>16</sub>**