

## Testul 5

1. a)  $170 \div 10$

b)  $233 \times 2$

c)  $7 \mid 784$

d)  $13 \times 40$

e)  $4408 \div 4$

2. a) a, b, c

$$b = a + 2$$

$$c = b + 2 = a + 2 + 2 = a + 4$$

$$a + b + c = 24$$

$$a + a + 2 + a + 4 = 24$$

$$3a + 6 = 24 \quad | :3$$

$$a + 2 = 8$$

$$a = 8 - 2 \Rightarrow a = 6$$

$$b = a + 2 = 6 + 2 \Rightarrow b = 8$$

$$c = b + 2 = 8 + 2 \Rightarrow c = 10$$

b)  $n = ?$

$$15 \div (n + 3)$$

$$D_{15} = \{1, 3, 5, 15\}$$

$$n + 3 = 1 \Rightarrow n = 1 - 3 \text{ (imposibil)}$$

$$n + 3 = 3 \Rightarrow n = 3 - 3 \Rightarrow n = 0$$

$$n + 3 = 5 \Rightarrow n = 5 - 3 \Rightarrow n = 2$$

$$n + 3 = 15 \Rightarrow n = 15 - 3 \Rightarrow n = 12$$

$$n = \{0, 2, 12\}$$



$$3. \overline{abc} : 125 = x \text{ rest } 3, \quad x \leq 125 \text{ și } (x \cdot 125 + 3) \leq \overline{abc}$$

$$\overline{abc} = 125 \cdot x + 3 \Rightarrow x = \{1, 2, 3, 4, 5, 6, 7\}$$

Pentru  $x=1$

$$\overline{abc} = 125 \cdot 1 + 3 = 128$$

$$x=2$$

$$\overline{abc} = 125 \cdot 2 + 3 = 250 + 3 = 253$$

$$x=3$$

$$\overline{abc} = 125 \cdot 3 + 3 = 375 + 3 = 378$$

$$x=4$$

$$\overline{abc} = 125 \cdot 4 + 3 = 500 + 3 = 503$$

$$x=5$$

$$\overline{abc} = 125 \cdot 5 + 3 = 625 + 3 = 628$$

$$x=6$$

$$\overline{abc} = 125 \cdot 6 + 3 = 750 + 3 = 753$$

$$x=7$$

$$\overline{abc} = 125 \cdot 7 + 3 = 875 + 3 = 878$$

$$x=8$$

$$\overline{abc} = 125 \cdot 8 + 3 = 1000 + 3 = 1003 \text{ (nu convine)}$$

$$\overline{abc} \in \{128, 253, 378, 503, 628, 753, 878\}$$

$$4. (\overline{a0b} + \overline{b0a}) : 101$$

$$\begin{aligned} \overline{a0b} + \overline{b0a} &= a \cdot 100 + 0 \cdot 10 + b + b \cdot 100 + 0 \cdot 10 + a = \\ &= 100a + b + 100b + a = 101a + 101b = \\ &= 101 \cdot (a + b) : 101 \Rightarrow \end{aligned}$$

$$\Rightarrow (\overline{a0b} + \overline{b0a}) : 101$$



$$5. \overline{abc} : 19 \Rightarrow \overline{abc} \in M_{19}$$

$$M_{19} = \{19, 38, 57, 76, 95, 114, \dots, 19 \cdot m, \dots\} \Rightarrow$$

$$\Rightarrow \overline{abc} = 114$$

$$6. a) 2m < x < 2m+8, x = \text{nr. impar}$$

$$x = \{2m+1; 2m+3; 2m+5; 2m+7\}$$

$$b) x, y = ?$$

$$13x + 6y = 44$$

$$6y : 2$$

$$44 : 2$$

$$\Rightarrow 13x : 2 \Rightarrow x : 2 \Rightarrow x = \{2, 4, \dots\} \Rightarrow$$

$$\Rightarrow x = 2.$$

$$\text{Pentru } x=2$$

$$13 \cdot 2 + 6y = 44 \Rightarrow 6y = 44 - 26 \Rightarrow 6y = 18 \Rightarrow y = 3$$

$$x=4$$

$$13 \cdot 4 + 6y = 44 \Rightarrow 52 + 6y = 44 \Rightarrow 6y = 44 - 52 \text{ (nu convine)}$$

$$(x, y) = (2, 3)$$