

## Varianta 5

### • Subiectul I

1.  $5\ 693\ 214$

2.  $3\text{ caieti} \dots\dots\dots 4\text{ cărți} \dots\dots\dots 29\text{ lei } 1 \cdot 3.$

$9\text{ caieti} \dots\dots\dots 12\text{ cărți} \dots\dots\dots x\text{ lei}$

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$9\text{ caieti} \dots\dots\dots 4\text{ cărți} \dots\dots\dots 29 \cdot 3 = 87\text{ lei}$

R: 87 lei

3.  $34\ 854 \approx 34\ 900$

4. R: 31

5.  $(3^6)^7 : 3^{39} - 3^2 = 3^{42} : 3^{39} - 3^2 = 3^3 - 3^2 = 27 - 9 = 18$

6. R: 5 elevi

### • Subiectul al II-lea

7.  $2^4 + 2^3 \cdot [(2^{16})^5 : 2^{77} + 2 \cdot 2^{55} : 2^{53}] : 4^3 =$

$= 16 + 8 \cdot (2^{16 \cdot 5} : 2^{77} + 2^{1+55-53}) : 4^3 =$

$= 16 + 8 \cdot (2^{80-77} + 2^3) : 64 =$

$= 16 + 8 \cdot (2^3 + 2^3) : 64 = 16 + 8 \cdot (8 + 8) : 64 =$

$= 16 + 8 \cdot 16 : 64 = 16 + 128 : 64 = 16 + 2 = 18$

R: 18

8.  $23m = ?$

$\overline{23m} : 5 \Rightarrow m = \{0, 5\}$

$23m \in \{230; 235\} = \{0; 115\}$

$$9. \quad 2^{126} > 5^{54}$$

$$2^{126} = 2^{18 \cdot 7} = (2^7)^{18} = 128^{18}$$

$$5^{54} = 5^{18 \cdot 3} = (5^3)^{18} = 125^{18}$$

• Subiectul al III-lea

10.  $a, b = ?$  prime

$$7a + 10b = 105$$

$$10b : 5$$

$$105 : 5$$

$$\left. \begin{array}{l} 10b : 5 \\ 105 : 5 \end{array} \right| \Rightarrow 7a = 105 - 10b \Rightarrow 7a = 5(21 - 2b) \left| \Rightarrow \right.$$

$$(105 - 10b) : 5 \Rightarrow 5(21 - 2b) : 5 \left| \Rightarrow \right.$$

$$\Rightarrow 7a : 5 \Rightarrow \boxed{a = 5}$$

Pentru  $a = 5$

$$7a + 10b = 105 \Leftrightarrow 7 \cdot 5 + 10b = 105 \Leftrightarrow 35 + 10b = 105 \Leftrightarrow$$

$$\Leftrightarrow 10b = 105 - 35 \Leftrightarrow 10b = 70 \Rightarrow b = 70 : 10 \Rightarrow \boxed{b = 7}$$

$$R: a = 5; b = 7$$

sau

$$7a + 10b = 105$$

$$7a : 7$$

$$105 : 7$$

$$\left. \begin{array}{l} 7a : 7 \\ 105 : 7 \end{array} \right| \Rightarrow 10b = 105 - 7a \Rightarrow 10b = 7(15 - a) \left| \Rightarrow \right.$$

$$7(15 - a) : 7 \left| \Rightarrow \right.$$

$$\Rightarrow 10b : 7 \Rightarrow \boxed{b = 7}$$

Pentru  $b = 7$

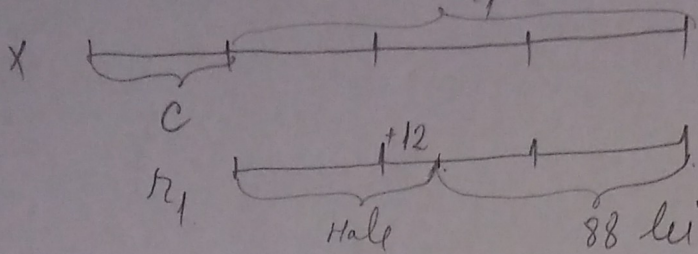
$$7 \cdot a + 10 \cdot 7 = 105 \Leftrightarrow 7a = 105 - 70 \Leftrightarrow 7a = 35 \Leftrightarrow$$

$$\Leftrightarrow a = 35 : 7 \Rightarrow \boxed{a = 5}$$

$$R: a = 5; b = 7$$

11.  $x = \text{suma inițială}$   
 $c = \text{suma cheltuită la Piață}$

$$x : 4 = c \Rightarrow x = 4 \cdot c$$



$$x - c = r_1 \Rightarrow r_1 = 4c - c \Rightarrow \underline{r_1 = 3c}$$

$$r_1 = c + 12 + 88 \Rightarrow \underline{r_1 = c + 100}$$

$$3c = c + 100$$

$$3c - c = 100$$

$$2c = 100$$

$$c = 50 \text{ lei a cheltuit la Piață}$$

$$x = 4 \cdot 50 = 200 \text{ lei (suma inițială)}$$