OLIMPIADA DE MATEMATICĂ A SATELOR DIN ROMÂNIA
BAREM CORECTARE - ETAPA JUDEȚEANĂ
CLASA a VI-a   7.03.2020

Problema 1. (7 puncte)

a) $a + a + 1 + a + 2 + a + 3 = -2$..(2p)

$4a = -8, \ a = -2$...(2p)

$P = (-2) \cdot (-1) \cdot (0) \cdot (1) = 0$...(1p)

b) $xy + x + y + 1 = 3 \Rightarrow (x + 1) \cdot (y + 1) = 3$........................(1p)

Perechile sunt: $(2; 0), (0; 2), (-4; -2), (-2; -4)$.....................(1p)

Problema 2. (7 puncte)

$$\left.\begin{array}{l} x = 3 \cdot c_1 + 2 \,|-2 \Rightarrow x - 2 \vdots 3 \\ x = 5 \cdot c_2 + 2 \,|-2 \Rightarrow x - 2 \vdots 5 \\ x = 7 \cdot c_3 \Rightarrow x \vdots 7 \end{array}\right\}$$ ....(3p)

$(x - 2) \in M_{15} = \{15, 30, 45, 60, 75, \ldots\ldots$ ....(2p)

$\left.\begin{array}{l} x \in \{17, 32, 47, 62, 77, \ldots\ldots. \\ x \vdots 7 \end{array}\right\}$ $x = 77$ ....(2p)

Problema 3. (7 puncte)

a) $11a + 33b = 25a + 5b \Rightarrow 2b = a \Rightarrow b = 50\%$ din a ....(2p)

b) $\dfrac{b}{a} = \dfrac{1}{2}$...(1p)

$10b + 5c = 7b + 14c \Rightarrow b = 3c \Rightarrow \dfrac{c}{b} = \dfrac{1}{3}$................................(1p)

c) $b = 9; c = 3; a = 18$...(3p)

Problema 4. (7 puncte)

Desen corect..(1p)

a) $\left.\begin{array}{l} OA = OB \\ \sphericalangle O \text{ comun} \\ \sphericalangle MAO \equiv \sphericalangle NBO \end{array}\right\} \overset{ULU}{\Rightarrow} \Delta MAO \equiv \Delta NBO \Rightarrow OM = ON$.............(2p)

$OM = ON, OA = OB \Rightarrow AN = BM$ ....(1p)

b) $\left.\begin{array}{l} AN = BM \\ \sphericalangle ONB \equiv \sphericalangle OMA \\ \sphericalangle NAC \equiv \sphericalangle MBC \end{array}\right\} \overset{ULU}{\Rightarrow} \Delta ACN \equiv \Delta BCM \Rightarrow AC = BC$.............(2p)

$\left.\begin{array}{l} OA = OB \\ AC = BC \\ \sphericalangle OAC \equiv \sphericalangle OBC \end{array}\right\} \overset{LUL}{\Rightarrow} \Delta OAC \equiv \Delta OBC \Rightarrow \sphericalangle BOC \equiv \sphericalangle AOC \Rightarrow (OC$ este

bisectoarea $\sphericalangle O$...(1p)

„Binele ce-l faci la oarecine, ţi-l întoarce vremea care vine"
Anton Pann

Felicitări!