OLIMPADA DE MATEMATICA

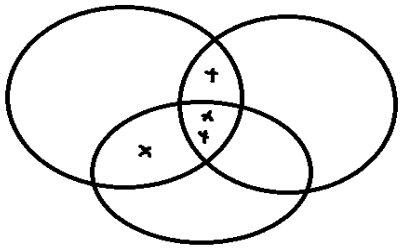
ETAPA LOCALĂ

18 februarie 2012

BAREM

CLASA A V-A

1.)	**Din oficiu**	**1p**
	$y = 45$	**3 p**
	$x < y$, y pătrat perfect $\Rightarrow x \in \{0;1;4;9;16;25;36\}$	**2 p**
	$x + y \in \{45;46;49;54;61;70;81\}$	**2 p**
	$x + y$ pătrat perfect $\Rightarrow x_1 = 4, y = 45 ; x_2 = 36, y = 45$	**2 p**

2.)	**Din oficiu**		**1p**
	$card(M \cup F \cup K) = 25$ $card(M \cap F \cap K) = 2$ $card(M \cap F) = 3$ $card(M \cap K) = 3$ $card(F \cap K) = 2$ $card[K \setminus (M \cup F)] = 5$ $cardM = cardF + 3$		**3p**
	$cardK = 5 + 3 = 8$		**2 p**
	$card(F \setminus M) = [25 - (5 + 3) - 3] : 2 = 14 : 2 = 7 \Rightarrow cardF = 7 + 3 = 10$		**3 p**
	$cardM = 10 + 3 = 13$		**1 p**

3.)	**Din oficiu**	**1p**
	$\overline{x1} + \overline{4x} = 96$	**3 p**
	$x \cdot 10 + 1 + 4 \cdot 10 + x = 96$	**3 p**
	$11x + 41 = 96$	**1 p**
	$x = 5$	**2 p**

4.)	**Din oficiu**	**1p**
	$x = 2012 \cdot 10 + r;\ r < 10 \Rightarrow r \in \{0,1,2,3,4,5,6,7,8,9\}$	**3p**
	x $\in$ {20120, 20121, 20122, 20123, ….20129}	**3p**
	S =20120 + 20121 + 20122 + 20123 + … + 20129 = 40249x5 = 201245	**3p**