

Barem de corectare OLM clasa a VI-a

22.02.2014

1).  $n \leq 149$ ,  $n = 20q + 7$ .....2p

rezolva inecuatia  $20q + 7 \leq 149$ .....2p

$q \in \{0, 1, 2, 3, 4, 5, 6, 7\}$ .....2p

sunt 8 numere.....1p

2). daca 1 nu este ultima cifra a lui A, atunci  $A:2$ .....2p

daca  $A = \underbrace{222\dots221}_{2013 \text{ cifre}} = 222222 \cdot 10^{2007} + 222222 \cdot 10^{2001} + \dots + 222222 \cdot 10^3 + 221$ .....2p

dar  $222222:13$  si  $221:13$ , deci  $A:13$ .....2p

finalizare A nu este prim.....1p

3). a).  $x \left( \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{2013} \right) + \frac{1}{2} + \frac{2}{3} + \dots + \frac{2012}{2013} = \underbrace{1+1+\dots+1}_{\text{de } 2012 \text{ ori}}$ .....1p

$x \left( \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{2013} \right) = \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{2013}$ .....1p

$x = 1$ .....1p

b). figura.....1p

$m\angle AOB = 2a$ ,  $m\angle BOC = 2b$ ,  $2a + 2b = 180^\circ$ ,  $a + b = 90^\circ$ .....1p

$m\angle BOY = b$ ,  $m\angle COX = a + 2b$ ,  $4b = a + 2b$ ,  $a = 2b$ .....1p

$a = 60^\circ$ ,  $m\angle AOB = 120^\circ$ .....1p

4). figura.....1p

$m\angle AOC = \frac{2}{7} m\angle BOC$ , suplementare  $\Rightarrow m\angle AOC = 40^\circ$ ,  $m\angle BOC = 140^\circ$ .....2p

$m\angle AOD = 140^\circ$ ,  $m\angle DOE = 90^\circ \Rightarrow m\angle AOE = 50^\circ$ .....1p

[OF bisec toare  $\angle AOE \Rightarrow m\angle AOF = 25^\circ$ .....1p

$\angle AOF = \angle BOH$  opuse la var f.....1p

$m\angle BOH = 25^\circ$ .....1p