

- 1) a)  $\frac{2014}{2013}$  .....5 p
- b) Calculul complementului  $82^{\circ}47'47''$  .....3p  
 Calculul suplementului  $97^{\circ}12'13''$  .....2p
- c)  $420 = 2^2 \cdot 3 \cdot 5 \cdot 7$  .....1p  
 $504 = 2^3 \cdot 3^2 \cdot 7$  .....1p  
 c.m.m.c. = 2520 .....2p  
 c.m.m.d.c. = 84 .....1p
- 2) a) F .....2p  
 Justificare .....3p
- b) F .....2p  
 Justificare .....3p
- c) A .....2p  
 Justificare .....3p
- d) A .....2p  
 Justificare .....3p
- e) F .....2p  
 Justificare .....3p
- 3) a) C .....5p  
 b) B .....5p
- 4)  $[(16^3)^2 \cdot (8^2)^3 : 2^6] = 2^6$  .....2p  
 $[2013^{\circ} + 0^{2013} + 1^{2013}] = 2$  .....1p  
 $[(4 \cdot 9)^4 \cdot 25^2] = 2^8 \cdot 3^8 \cdot 5^4$  .....2p  
 $[2^6 \cdot (27 \cdot 10)^2] = 2^8 \cdot 3^6 \cdot 5^2$  .....2p  
 $n = 256$  .....2p  
 finalizare .....1p
- 5)  $X = 4a + 3$  .....1p  
 $X = 6b + 5$  .....1p  
 $X = 8c + 7$  .....1p  
 $X + 1 : 4, 6, 8$  .....3p  
 $[4, 6, 8] = 24$  .....1p  
 $X + 1 \in \{24, 48, \dots\}$  .....1p  
 $X - 1 \in \{23, 47, \dots\}$  .....1p  
 $X = 119$  .....1p
- 6) Desen .....3p  
 $X = 30^{\circ}$  .....3p  
 $m(\sphericalangle AON) = 75^{\circ}$  .....3p  
 Finalizare .....1p
- 7) Desen .....2p
- a)  $M_1M_2 = M_3M_4$  .....2p  
 Finalizare .....1p
- b)  $M_5M_k = M_5M_6 + M_6M_{7+} \dots + M_{k-1}M_k$  .....1p  
 $(K - 1) \cdot K = 22350$  .....3p  
 $K = 150$  .....1p