



CLASA A V-A

BAREM

SUBIECTUL 1.

1.  $5^3 = 125$  .....1p  
 $6^3 = 216$  .....1p  
 $7^3 = 343$  .....1p  
 $11^3 = 1331$  .....1p  
 $5^3 + 6^3 + 7^3 + 11^3 = 2015$  .....1p
2.  $2015^{2014} = 2015^{2013} \cdot 2015$  .....1p  
 $2015^{2013} = 2015^{671^3} \cdot 2015$  .....1p  
 $2015^{2014} = 2015^{671^3} \cdot 5^3 + 6^3 + 7^3 + 11^3$  .....2p  
 $2015^{2014} = 2015^{671} \cdot 5^3 + 2015^{671} \cdot 6^3 + 2015^{671} \cdot 7^3 + 2015^{671} \cdot 11^3$  .....2p
3.  $n = 25 - \overline{2m} \Rightarrow n + m = 5$  .....2p  
 $A = 23,41$  .....2p  
 $a = \frac{\overline{a6}}{\overline{1b}} \Rightarrow a \cdot \overline{1b} = \overline{a6} \Rightarrow ab = 6$  .....2p  
 $B = 23,61$  .....2p  
 $A \cap B = 23$  .....1p

SUBIECTUL 2.

- a)  $2b = a + c \Rightarrow b = \frac{a+c}{2}$  .....1p  
 $2c = b + d \Rightarrow c = \frac{b+d}{2}$  .....1p
- Exemplu:**  $a = 5, b = 6, c = 7, d = 8$  .....4p
- Verificare  $6 = \frac{5+7}{2}, 7 = \frac{6+8}{2}$  .....2p

b)  $u = \frac{73+99}{2} = 86$  .....1p

$70 = \frac{73+x}{2} \Rightarrow x = 67$  .....1p

$67 = \frac{a+70}{2} \Rightarrow a = 64$  .....1p

$99 = \frac{t+86}{2} \Rightarrow t = 112$  .....1p

$p = \frac{88+112}{2} \Rightarrow p = 100$  .....1p

$88 = \frac{d+100}{2} \Rightarrow d = 76$  .....1p

$$\left. \begin{array}{l} c = \frac{b+76}{2} \\ b = \frac{64+c}{2} \end{array} \right\} \Rightarrow \begin{cases} b = 68 \\ c = 72 \end{cases} \dots\dots\dots 2p$$

Analog se află:

$y = 74$  .....1p

$z = 81$  .....1p

$m = 80$  .....1p

$n = 90$  .....1p

**SUBIECTUL 3.**

1.  $\overline{ab} = n \cdot n + 1$  .....2p

Mulțimea numerelor factoriale de două cifre este 12, 20, 30, 42, 56, 72, 90 .....3p

$\overline{ba} \in \{21, 24, 65, 27\}$  .....2p

$21, 24, 65, 27 \notin \{12, 20, 30, 42, 56, 72, 90\}$  .....2p

2.  $8 \text{ min } 3 \text{ sec} = 8 \cdot 60 + 3 = 483 \text{ sec}$  .....2p

$483 : 42 = 11,5 = 11 \frac{1}{2} \Rightarrow$  furnica parcurge 11 ture și jumătate .....2p

Dacă pleacă din A furnica ajunge în punctul C .....2p

$P = 2 \cdot L + l = 2 \cdot 90 = 180 \text{ cm}$  .....2p

Distanța este  $d = 11 \cdot 180 + \frac{180}{2} = 1980 + 90 = 2070 \text{ cm}$  .....3p

