

BAREM DE CORECTARE

CLASA A VIII<sup>o</sup>

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Pentru fiecare răspuns corect se acordă 5p = 5 x 10 = 50p

- I. (1) B (2) A (3) A (4) B (5) C (6) C  
 (7) B (8) B (9) A (10) C

II (11) a)  $n+49 = k^3$      $n-49 = p^3 \Rightarrow k^3 - p^3 = 98$  3p  
 $(k-p)(k^2+kp+p^2) = 98$  2p

a)  $\begin{cases} k-p=1 \\ k^2+kp+p^2=90 \end{cases} \Leftrightarrow \begin{cases} k-p=1 \\ k^2-2kp+p^2+3kp=98 \end{cases} \begin{cases} k-p=1 \\ (k-p)^2+3kp=98 \end{cases}$  3p  
 $\Rightarrow 1+3kp=98 \Rightarrow 3kp=97$  2p

b)  $\begin{cases} k-p=2 \\ (k-p)^2+3kp=49 \end{cases} \Rightarrow 4+3kp=49 \Rightarrow 3kp=45$  3p  
 $kp=15 \Rightarrow k=5, p=3 \Rightarrow n=125-49=76$  2p

c)  $\begin{cases} k-p=7 \\ (k-p)^2+3kp=14 \end{cases} \Rightarrow 49+3kp=14$  2p

b)  $E = 2(x^2-2xy+y^2) + 3(y^2-2yt+t^2) + 4(t^2-4tz+z^2) + 6(z^2-3z+\frac{9}{4}) + \frac{1}{2}$  5p  
 $= 2(x-y)^2 + 3(y-t)^2 + 4(t-2z)^2 + 6(z-\frac{3}{2})^2 + \frac{1}{2} = \min \Rightarrow$

$2(x-y)^2 + 3(y-t)^2 + 4(t-2z)^2 + 6(z-\frac{3}{2})^2 = \min$  3p  
 dar  $(x-y)^2 \geq 0, (y-t)^2 \geq 0, (t-2z)^2 \geq 0, (z-\frac{3}{2})^2 \geq 0$   
 $\Rightarrow E = \min = \frac{1}{2}$  dacă  $z = \frac{3}{2}; t = 3, x = y = t = 3$  2p

10p

