

**CONCURSUL INTERJUDEȚEAN DE FIZICĂ "CYGNUS"
SUCEAVA
23 martie, 2019**

Clasa a VII-a, PROBLEMA 1

Barem de notare	Parțial	Punctaj
Problema 1		10 p
a)	3 p	
$T = \frac{N(N-1)l}{2v_0}.$ $d_1 = (N-1)l; d_2 = (N-2)l; d_3 = (N-3)l; \dots\dots\dots d_{N-2} = 2l; d_{N-1} = l.$		
b)	3 p	
$\Delta E_c = \frac{mv_0^2}{2} \left(1 - \frac{1}{N} \right).$		
c)	3 p	
$t = \frac{2N^2l}{v_0}.$		
Oficiu	1 p	

Clasa a VII-a, PROBLEMA 2

Barem de notare	Parțial	Punctaj
Problema 2		10 p
a)	3 p	
$L = \frac{2\mu mg}{k}; d = l_0 - \frac{\mu mg}{k}.$		
b)	3 p	
$L' = \frac{2\mu mg}{k} \sqrt{1 - \frac{H^2}{L^2}};$ $d' = l_0 - \frac{mg}{k} \left[\mu \sqrt{1 - \frac{H^2}{L^2}} - \frac{H}{L} \right].$		
c)	3 p	
$L'' = \frac{2\mu mg}{k} \sqrt{1 - \frac{H^2}{L^2}};$ $d'' = l_0 - \frac{mg}{k} \left[\mu \sqrt{1 - \frac{H^2}{L^2}} + \frac{H}{L} \right].$		
Oficiu	1 p	

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Clasa a VII-a, PROBLEMA 3

Barem de notare	Parțial	Punctaj
Problema 3		10 p
a)	3 p	
$\tau = \frac{(v_2 - v_1)\tau_1\tau_2}{v_1\tau_1 + v_2\tau_2};$		
b)	3 p	
$t = \frac{d}{\frac{\sqrt{3}}{2}u + v}.$		
c)	3 p	
$h_s = h_1 + \frac{4ud}{\sqrt{3}u + 2v}.$		
Oficiu	1 p	