

BAREM DE EVALUARE ȘI DE NOTARE

Varianta 155

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SUBIECTUL I		(30 de puncte)			
1.	-99	5p			
2.	3	5p			
3.	0,37	5p			
4.	18	5p			
5.	45°	5p			
6.	16°C	5p			
SUBIECTUL II		(30 de puncte)			
1.	Desenează prisma. Notează prisma.	5p			
2.	$ 2x - 7 \leq 5 \Rightarrow -5 \leq 2x - 7 \leq 5$ $\Rightarrow 2 \leq 2x \leq 12 \Rightarrow A = \{1; 2; 3; 4; 5; 6\}$ $B = \{-2; -1; 0; 1; 2; 3\}$ $A \cap B = \{1; 2; 3\}$	5p			
3.	$a = 7 \cdot c_1 + 3 \Rightarrow a - 4 = 7 \cdot (c_1 + 1)$ $a = 9 \cdot c_2 + 5 \Rightarrow a + 4 = 9 \cdot (c_2 + 1) \Rightarrow a + 4 = [7; 9] = 63 \Rightarrow a = 59$	5p			
4.	a) Reprezintă un punct pe grafic. Reprezintă al doilea punct pe grafic. Trasează graficul funcției. <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>x</td><td>0</td><td>1</td></tr> </table>	x	0	1	5p
x	0	1			

	<table border="1"> <tr> <td>$f(x)$</td><td>3</td><td>1</td></tr> </table> $f(0)=3$ $f(1)=1$	$f(x)$	3	1	
$f(x)$	3	1			
	<p>b) $OA=3$</p> $OB = \frac{3}{2}$ $AB^2 = \sqrt{OA^2 + OB^2} = \sqrt{9 + \frac{9}{4}} \Rightarrow AB = \frac{3\sqrt{5}}{2}$ $d(O; AB) = \frac{OA \cdot OB}{AB} = \frac{3\sqrt{5}}{5}$	5p			
5	$\frac{\sqrt{2}}{\sqrt{2}} - \frac{\sqrt{1}}{\sqrt{2}} + \frac{\sqrt{3}}{\sqrt{6}} - \frac{\sqrt{2}}{\sqrt{6}} + \dots + \frac{\sqrt{n+1}}{\sqrt{n(n+1)}} - \frac{\sqrt{n}}{\sqrt{n(n+1)}} = \frac{9}{10}$ $1 - \frac{1}{\sqrt{2}} + \frac{1}{\sqrt{2}} - \frac{1}{\sqrt{3}} + \dots + \frac{1}{\sqrt{n}} - \frac{1}{\sqrt{n+1}} = \frac{9}{10}$ $\frac{\sqrt{n+1}-1}{\sqrt{n+1}} = \frac{9}{10} \Rightarrow \sqrt{n+1} = 10 \Rightarrow n = 99$	5p			
SUBIECTUL III		(30 de puncte)			
1.	<p>a) $A = \frac{c_1 \cdot c_2}{2} = \frac{6 \cdot 24}{2} = 72 \text{ m}^2$</p>	5p			
	<p>b) $MN \parallel AB \Rightarrow \triangle CMN \sim \triangle CAB \Rightarrow \frac{MN}{AB} = \frac{CN}{BC} = k$</p> $\frac{A_{\triangle AMV}}{A_{\triangle ABC}} = k^2 = \frac{1}{2} \Rightarrow k = \frac{\sqrt{2}}{2}$ $\frac{MN}{6} = \frac{\sqrt{2}}{2} \Rightarrow MN = 3\sqrt{2}$ $\frac{CN}{24} = \frac{\sqrt{2}}{2} \Rightarrow CN = 12\sqrt{2} \Rightarrow NB = BC - CN = 24 - 12\sqrt{2} = 12(2 - \sqrt{2})$	5p			

	<p>c) $A_{(ABCD)} = \frac{AB \cdot BC}{2} = 72 \text{ m}^2$</p> <p>$A_{(AMNB)} = \frac{1}{2} A_{(\triangle ABC)} = 36 \text{ m}^2$</p> <p>Costul mochetei $36 \cdot 18,75 \text{ lei} = 675 \text{ lei}$</p>	5p
2.	a) $V = \frac{A_b \cdot h}{3} = \frac{6 \cdot 6 \cdot 6}{3} = 72 \text{ cm}^2$	5p
	<p>b) $A_t = 6 \cdot a^2 = 6 \cdot 36 = 216 \text{ cm}^2$</p> <p>$216 \text{ cm}^2 = 0,0216 \text{ m}^2$</p> <p>Prețul: $0,0216 \cdot 250 = 5,4 \text{ lei}$</p>	5p
	c) $V_{cutie} - V_{piatra} = 216 - 72 = 144 \text{ cm}^2$	5p