

BAREM DE EVALUARE ȘI DE NOTARE

Varianta 191

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SUBIECTUL I		(30 de puncte)
1.	104	5p
2.	8	5p
3.	5	5p
4.	8	5p
5.	61	5p
6.	9	5p
SUBIECTUL II		(30 de puncte)
1.	Desenează prisma	4p
	Notează prisma	1p
2.	$3 = \sqrt{9} < 2\sqrt{3} = \sqrt{12} \Rightarrow 3 - 2\sqrt{3} < 0 \Rightarrow a = 3 - 2\sqrt{3} = 2\sqrt{3} - 3$	2p
	$b = 3 + 2\sqrt{3} = 2\sqrt{3} + 2$	1p
	$m_g = \sqrt{(2\sqrt{3} - 3)(2\sqrt{3} + 3)} = \sqrt{12 - 9} = \sqrt{3}$	1p
3.	Notăm cu b numărul de bănci	
	$b - 7 = (b - 5) \cdot 2 + 1$ $b = 16$	4p 1p
4.	a) $f(x) = 0 \Rightarrow x = 1 \Rightarrow A(1; 0) \Rightarrow OA = 1$	2p
	$f(0) = -2 \Rightarrow B(0; -2) \Rightarrow OB = 2$	2p
	$A_{OAB} = \frac{OA \cdot OB}{2} = 1$	1p

b)	$P(x; x) \Rightarrow f(x) = x$ $2x - 2 = x \Rightarrow x = 2 \Rightarrow P(2; 2)$	2p 3p
5	$x^2 - x - 2 = (x - 2)(x + 1)$ $E(x) = \left(\frac{2}{x+1} + \frac{2}{x^2-1} - \frac{1}{x-1} \right) (x-2)(x+1)$ $E(x) = \frac{x-1}{(x-1)(x+1)} (x+1)(x-2) = x-2$ $m-2 = 2 \Leftrightarrow m = 4$	1p 1p 2p 1p
SUBIECTUL III		(30 de puncte)
1.	a) $BC = 12m, CD = 20m$ $P_{ABCD} = AB + BC + CD + DA$ $P_{ABCD} = 40 + 12 + 20 + 16 = 88m$	2p 1p 2p
	b) $DC \parallel \parallel CM - \text{paralelogram} \Rightarrow$ $CM = AD = 16m, AM = DC = 20m, MB = 40 - 20 = 20m$ Reciproca teoremei lui Pitagora $\Rightarrow \Delta$ <i>reptunghic</i> , $MC \perp BC$ $A_{MCB} = \frac{MC \cdot CB}{2} = 96m^2 < 100m^2 = 1ar$	2p 1p 2p
	c) $CN \perp MB, N \in (MB), CN = \frac{MC \cdot CB}{MB} = 9,6m$ $A_{AMCD} = AM \cdot CN = 20 \cdot 9,6 = 192m^2$ $1ha = 10000 m^2$ $\frac{P}{100} \cdot 10000 = 192 \Rightarrow p = 1,92$	1p 1p 1p 2p
2.	a) $A_l = \pi RG = 15 \cdot 25\pi$ $A_l = 375m^2$	3p 2p

	<p>b)Fie VO înălțimea conului, VO=20 cm</p> $V = \frac{15^2 \cdot 20}{3} \pi = 1500\pi \text{ cm}^3$ $1l = 1 \text{ dm}^3$ $1500\pi < 1500 \cdot 3,15 = 4725 \text{ cm}^3 = 4,725 \text{ l} < 5 \text{ l}$	<p>1p</p> <p>1p</p> <p>1p</p> <p>2p</p>
	<p>c)Fie VO' distanța de la punctul V la planul de secțiune</p> $A_{l_{tr_con}} = 3A_{l_{con_mic}} \Rightarrow A_{l_{con}} = 4A_{l_{con_mic}}$ $\frac{A_{l_{con_mic}}}{A_{l_{con}}} = \left(\frac{VO'}{VO}\right)^2 \Rightarrow \frac{VO'}{VO} = \frac{1}{2}$ <p>VO'=10cm</p>	<p>2p</p> <p>2p</p> <p>1p</p>