

BAREM DE EVALUARE ȘI DE NOTARE

Varianta 37

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SUBIECTUL I		(30 de puncte)
1.	5	5p
2.	$\frac{5}{11}$	5p
3.	(0; 4)	5p
4.	0,18	5p
5.	10	5p
6.	$\frac{19}{29}$	5p
SUBIECTUL II		(30 de puncte)
1.	Desenează trunchiul de piramida patrulatera regulată Notează trunchiul de piramida patrulatera regulată	4p 1p
2.	$(a, b) = 11 \Rightarrow a = 11k, b = 11l, (k, l) = 1$ $2 \cdot 11k + 5 \cdot 11l = 176 \Rightarrow 2k + 5l = 16$ $(a, b) \in \{(33, 22)\}$	2p 1p 2p
3.	$5 \cdot (3a + 4b + c) = 5 \cdot 14 \Rightarrow 15a + 20b + 5c = 70$ $15a + 20b + 5c - (2a - b + 3c) = 70 - 9$ $13a + 21b + 2c = 61$	2p 2p 1p
4.	a) $\left(\sqrt{37 + 12\sqrt{7}}\right)^2 = (3 + 2\sqrt{7})^2$ $37 + 12\sqrt{7} = 3^2 + 2 \cdot 3 \cdot 2\sqrt{7} + (2\sqrt{7})^2$	2p 2p

	$37 + 12\sqrt{7} = 9 + 12\sqrt{7} + 28$	1p
	$\text{b) } \sqrt{(3 - 2\sqrt{7})^2} = 3 - 2\sqrt{7} $ $3 < 2\sqrt{7} \Rightarrow 3 - 2\sqrt{7} < 0 \Rightarrow 3 - 2\sqrt{7} = -(3 - 2\sqrt{7}) = 2\sqrt{7} - 3$ $x = 3 + 2\sqrt{7} + 2\sqrt{7} - 3 = 4\sqrt{7}$ $(x - 4\sqrt{7} - 1)^{2012} = (4\sqrt{7} - 4\sqrt{7} - 1)^{2012} = (-1)^{2012} = 1$	<p>2p</p> <p>1p</p> <p>1p</p> <p>1p</p>
5	$f(-1) = -2 \Rightarrow -a + b = -5$ $f(1) = 4 \Rightarrow a + b = 3$ $\begin{cases} -a + b = -5, \\ a + b = 3 \end{cases} \Leftrightarrow \begin{cases} a = 4 \\ b = -1 \end{cases}$ $f(x) = 3x + 1$	<p>1p</p> <p>1p</p> <p>2p</p> <p>1p</p>
SUBIECTUL III		(30 de puncte)
1.	$\text{a) } V_{\text{cusca}} = V_{\text{cuboid}} + V_{\text{prisma}}$ $V_{\text{cuboid}} = a \cdot b \cdot c = 0,8 \cdot 1 \cdot 0,8 = 0,64 \text{ m}^3$ $A_b = \frac{l^2 \sqrt{3}}{4} = 0,16\sqrt{3} \text{ m}^2$ $V_{\text{prisma}} = A_b \cdot h = 0,16\sqrt{3} \text{ m}^3$ $V_{\text{cusca}} = 0,64 \text{ m}^3 + 0,16\sqrt{3} \text{ m}^3 = 0,16(4 + \sqrt{3}) \text{ m}^3$	<p>1p</p> <p>1p</p> <p>1p</p> <p>1p</p> <p>1p</p>
	$\text{b) } A_{\text{usa}} = A_{\text{MNPQ}} + A_{\text{PQ}}$ $A_{\text{MNPQ}} = MN \cdot NP = 60 \text{ cm} \cdot 30 \text{ cm} = 1800 \text{ cm}^2$	<p>1p</p> <p>1p</p>

	$A_{PQ} = \frac{\pi R^2}{2} = \frac{900\pi}{2} = 450\pi \text{ cm}^2$ $A_{usa} = 1800 \text{ cm}^2 + 450\pi \text{ cm}^2 \approx 1800 \text{ cm}^2 + 1413 \text{ cm}^2 = 3213 \text{ cm}^2$	<p>1p</p> <p>2p</p>
	<p>c) $A_{de \text{ vopsit}} = A_{l \text{ cuboid}} = P_b \cdot h$</p> $A_{l \text{ cuboid}} = 3,6 \cdot 0,8 = 2,88 \text{ m}^2$ $2,88 \cdot 0,3 = 0,864 \text{ litri vopsea}$	<p>1p</p> <p>2 p</p> <p>2p</p>
2.	<p>a) $\left. \begin{array}{l} GH \parallel CF \\ GF \parallel CH \end{array} \right\} \Rightarrow CFGH \text{ paralelogram} \Rightarrow GH = CF = 2 \text{ m si } GF = CH$</p> $BH = AB - HG - GA = 24 \text{ m} - 2 \text{ m} - 2 \text{ m} = 20 \text{ m}$ <p>Din $\triangle HCB$ cu $m(\angle HCB) = 90^\circ \Rightarrow HC = 16 \text{ m}$</p> <p>Lungimea gardului este $GF=HC=16 \text{ m}$</p>	<p>1p</p> <p>1p</p> <p>2p</p> <p>1p</p>
	<p>b) $A_{\triangle ADE} = \frac{b \cdot i}{2} = \frac{DE \cdot AA'}{2}$</p> <p>Fie CC' și DD' înălțimi în trapez</p> $\triangle HCB \text{ cu } m(\angle HCB) = 90^\circ \Rightarrow CC' = \frac{c_1 \cdot c_2}{ip} = \frac{HC \cdot BC}{BH} = 9,6 \text{ m}$ $\triangle HCB \text{ cu } m(\angle HCB) = 90^\circ \Rightarrow BC^2 = BH \cdot BC' \Rightarrow BC' = 7,2 \text{ m}$ $DC = 24 - 7,2 - 7,2 = 9,6 \text{ m} \Rightarrow DE = DC - EF - FC = 9,6 - 2 - 2 = 5,6 \text{ m} \Rightarrow$ $A_{\triangle ADE} = \frac{9,6 \cdot 5,6}{2} = 26,88 \text{ m}^2$	<p>1p</p> <p>2p</p> <p>1p</p> <p>1p</p>
	<p>c) $A_{terasa} = A_{\triangle BCH} = \frac{c_1 \cdot c_2}{2} = \frac{BC \cdot CH}{2} = \frac{12 \cdot 16}{2} = 96 \text{ m}^2$</p> $96 + \frac{10}{100} \cdot 96 = 96 + 9,6 = 105,6 \text{ m}^2 \text{ gresie}$ $105,6 \cdot 40 = 4224 \text{ lei costă gresia}$	<p>2p</p> <p>2p</p> <p>1p</p>