

BAREM DE EVALUARE ȘI DE NOTARE

Varianta 46

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SUBIECTUL I		(30 de puncte)
1.	$b = 5\sqrt{2}$	5p
2.	1987	5p
3.	80°	5p
4.	12	5p
5.	0	5p
6.	2	5p
SUBIECTUL II		(30 de puncte)
1.	Desenează corect Notează corect	4p 1p
2.	$a + 6b = 2b + c \Rightarrow a + 6b - 2b = c \Rightarrow a + 4b = c$ $E = a + 4b + 5c - 719 = c + 5c - 719 = 6c - 719 =$ $6 \cdot 120 - 719 = 720 - 719 = 1$	2p 2p 1p
3.	<p>Notăm cu x, lungimea drumului și avem</p> <p>În prima etapă: $\frac{1}{5}x + 10$</p> <p>Drum rămas $x - \left(\frac{1}{5}x + 10\right) = \frac{4}{5}x - 10$</p> <p>Etapă a doua: $\frac{1}{2}\left(\frac{4}{5}x - 10\right) + 17$</p>	<p>1p</p> <p>1p</p> <p>1p</p> <p>1p</p>

	$\frac{1}{5}x + 10 + \frac{1}{2}\left(\frac{4}{5}x - 10\right) + 17 + 30 = x$ $\frac{1}{5}x + \frac{2}{5}x + 52 = x$ $\frac{3}{5}x + 52 = x$ $52 = x - \frac{3}{5}x$ $52 = \frac{2x}{5} \Rightarrow x = 130$	1p
4.	$a) \sphericalangle(A'B, (ABC)) = \sphericalangle(A'B, pr_{ABC} A'B) =$ $\sphericalangle(A'B, AB) = \sphericalangle A'BA$ $tg(\sphericalangle A'BA) = \sqrt{3} \Rightarrow$ $m(\sphericalangle A'BA) = 60^\circ$	1p 1p 1p 2p
	$b) CE \perp AB$ $AA' \perp (ABC) \text{ și } CE \subset (ABC) \Rightarrow AA' \perp CE$ $CE \perp AB, CE \perp A'A, AA' \cap AB = \{A\}$ $\Rightarrow CE \perp (A'AB) \Rightarrow$ $d(C, (A'AB)) = CE = \frac{6\sqrt{3}}{2} = 3\sqrt{3}cm$	1p 1p 1p 1p 1p
5	<p>Suma are 333 termeni pe care îi grupăm câte 3</p> $S = 7(1 + 7 + 7^2) + 7^4(1 + 7 + 7^2) + \dots + 7^{331}(1 + 7 + 7^2) =$ $57(7 + 7^4 + \dots + 7^{331}) : 57$	1p 1p 1p
SUBIECTUL III		(30 de puncte)
1.	$a) \begin{cases} 3x - 5y = -22 \\ 2x - y = 4 \end{cases} \Rightarrow \begin{cases} 3x - 5y = -22 \\ -10x + 5y = -20 \end{cases} \Rightarrow \begin{cases} x = 6 \\ y = 8 \end{cases}$ <p>Atunci $AB = 6$ cm și $AC = 8$ cm</p>	2p 1p

	$BC^2 = AB^2 + AC^2 \Rightarrow BC = 10\text{cm}$ $\triangle ABC, m(\sphericalangle A) = 90^\circ \text{ avem } \text{Aria} = \frac{AB \cdot AC}{2} = \frac{6 \cdot 8}{2} = 24\text{cm}^2$ $\text{Perimetru} = AB + AC + BC = 6 + 8 + 10 = 24\text{cm}$	<p>1p</p> <p>1p</p>
	$\triangle ABC \Rightarrow AB^2 = BD \cdot BC \Rightarrow$ <p>b) Fie $AD \perp BC$, aplicăm T.catetei in $BD = \frac{AB^2}{BC} = \frac{36}{10} = 3,6\text{cm}$</p> $DC = BC - BD = 10 - 3,6 = 6,4\text{CM}$	<p>1p</p> <p>2p</p> <p>2p</p>
	$A = \frac{r \cdot P}{2} \Rightarrow r = \frac{2A}{P} = \frac{48}{24} = 2$ <p>c) $\Rightarrow r = 2$</p> $A_{\text{cerc}} = \pi r^2 = 4\pi\text{cm}^2$	<p>2p</p> <p>1p</p> <p>2p</p>
2.	$A(-1; 2) \in G_f \Leftrightarrow f(-1) = 2 \Leftrightarrow -a + b = 2$ $B(2; -1) \in G_f \Leftrightarrow f(2) = -1 \Leftrightarrow 2a + b = -1$ <p>a) $\Rightarrow \begin{cases} a = -1 \\ b = 1 \end{cases} \Rightarrow$</p> $f(x) = -x + 1$	<p>1p</p> <p>1p</p> <p>1p</p> <p>2p</p>
	<p>b) $MA = MB = 3 \Rightarrow \triangle ABM$ dreptunghic isoscel</p> $\Rightarrow m(\sphericalangle ABM) = 45^\circ \Rightarrow$ $\text{tg}(\sphericalangle ABM) = 1$	<p>2p</p> <p>2p</p> <p>1p</p>
	<p>c) $AB = \sqrt{MA^2 + MB^2} \Rightarrow AB = 3\sqrt{2}$</p> $P = AM + AB + MB = 6 + 3\sqrt{2}$ $A = \frac{c_1 \cdot c_2}{2} = \frac{3 \cdot 3}{2} = \frac{9}{2}$	<p>1p</p> <p>2p</p> <p>2p</p>