

**Evaluarea națională pentru absolvenții clasei a VIII-a**  
**Decembrie 2025**  
**Matematică**  
**Barem de evaluare și de notare**

Simulare județeană

*Scoala in Papuci*

**SUBIECTUL I**

**(30 puncte)**

|    |    |    |
|----|----|----|
| 1. | b) | 5p |
| 2. | c) | 5p |
| 3. | a) | 5p |
| 4. | d) | 5p |
| 5. | c) | 5p |
| 6. | a) | 5p |

**SUBIECTUL al II-lea**

**(30 puncte)**

|    |    |    |
|----|----|----|
| 1. | c) | 5p |
| 2. | d) | 5p |
| 3. | b) | 5p |
| 4. | a) | 5p |
| 5. | d) | 5p |
| 6. | d) | 5p |

**SUBIECTUL al III-lea**

**(30 puncte)**

|    |                                                                                                                                                                                                                                                                                                                                                                    |                |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 1. | a) $1080 - 810 = 270$ lei are Ioana și mai primește $810 : 10 = 81$ lei                                                                                                                                                                                                                                                                                            | 1p             |
|    | $270 + 81 = \frac{2}{3}(810 - 81) \Leftrightarrow 351 = 486 (F) \Rightarrow$ Maria nu poate avea 810 lei                                                                                                                                                                                                                                                           | 1p             |
|    | b) $x =$ suma Mariei, $y =$ suma Ioanei, $x + y = 1080$ , $y + \frac{x}{10} = \frac{2}{3} \cdot \frac{9x}{10}$<br>$y = \frac{x}{2} \Rightarrow x = 2y$<br>$3y = 1080 \Rightarrow y = 360 \Rightarrow$ Ioana are 360 de lei                                                                                                                                         | 1p<br>1p<br>1p |
| 2. | a) $-9 < 2x - 5 \leq 15 \Leftrightarrow -4 < 2x \leq 20$<br>$-2 < x \leq 10 \Leftrightarrow A = (-2; 10]$                                                                                                                                                                                                                                                          | 1p<br>1p       |
|    | b) $\sqrt{(2x + 5)^2} \leq 7 \Leftrightarrow  2x + 5  \leq 7$<br>$-7 \leq 2x + 5 \leq 7 \Leftrightarrow -12 \leq 2x \leq 2 \Leftrightarrow -6 \leq x \leq 1 \Rightarrow B = [-6; 1]$<br>$A \cap B \cap \mathbb{Z} = \{-1; 0; 1\}$                                                                                                                                  | 1p<br>1p<br>1p |
| 3. | a) $(3x - 2)^2 = 9x^2 - 12x + 4$ , $(5x + 1)^2 = 25x^2 + 10x + 1$ , $(3 - 4x)(3 + 4x) = 9 - 16x^2$<br>$E(x) = 9x^2 - 12x + 4 - 25x^2 - 10x - 1 - 9 + 16x^2 + 24x + 2 = 2x - 4$                                                                                                                                                                                     | 1p<br>1p       |
|    | b) $E(\sqrt{2}x + \sqrt{3}) = 2(\sqrt{2}x + \sqrt{3}) - 4$ ; $E(\sqrt{3}x + \sqrt{2}) = 2(\sqrt{3}x + \sqrt{2}) - 4$<br>$2\sqrt{2}x + 2\sqrt{3} - 4 \leq 2\sqrt{3}x + 2\sqrt{2} - 4 \Leftrightarrow 2\sqrt{2}x - 2\sqrt{3}x \leq 2\sqrt{2} - 2\sqrt{3}$<br>$x(\sqrt{3} - \sqrt{2}) \geq \sqrt{3} - \sqrt{2} \Leftrightarrow x \geq 1 \Rightarrow S = [1; +\infty)$ | 1p<br>1p<br>1p |
| 4. | a) $\triangle MCN \equiv \triangle MBP$ (C. U.)                                                                                                                                                                                                                                                                                                                    | 1p             |
|    | $BP = NC = \frac{DC}{2} = \frac{12 \text{ cm}}{2} = 6 \text{ cm}$                                                                                                                                                                                                                                                                                                  | 1p             |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                    |                                             |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
|    | <b>b)</b> $\angle B = \angle C = 90^\circ, \angle BQP \equiv \angle CQD \Rightarrow \Delta BQP \sim \Delta CQD$<br>$\frac{BQ}{CQ} = \frac{BP}{DC} = \frac{6}{12} = \frac{1}{2} \Rightarrow CQ = 2BQ$<br>$3BQ = 12 \text{ cm} \Rightarrow BQ = 4 \text{ cm} \Rightarrow QM = BM - BQ = 6 \text{ cm} - 4 \text{ cm} = 2 \text{ cm}$                                                                                  | <b>1p</b><br><br><b>1p</b><br><br><b>1p</b> |
| 5. | <b>a)</b> $AB \parallel ED, \angle ADC = 90^\circ \Rightarrow ABED$ trapez dreptunghic<br>$A_{ABED} = \frac{(AB+DE)AD}{2} = 125 \text{ cm}^2$                                                                                                                                                                                                                                                                      | <b>1p</b><br><br><b>1p</b>                  |
|    | <b>b)</b> $TC = 2,5 \text{ cm}, DE = 15 \text{ cm} \Rightarrow DT = TE, \Delta BGS \equiv \Delta FSE \Rightarrow SB \equiv SE$<br>$TS$ linie mijlocie în $\Delta BDE \Rightarrow TS \parallel BD$<br>$\Delta BGF$ dreptunghic isoscel $\Rightarrow \angle DBF = \angle DBC + \angle GBF = 90^\circ \Rightarrow BD \perp BF \Rightarrow TS \perp BF$                                                                | <b>1p</b><br><br><b>1p</b><br><br><b>1p</b> |
| 6. | <b>a)</b> $BD = BC - DC = 4DC - DC = 3DC \Rightarrow DC = 3 \text{ cm} \Rightarrow BC = 12 \text{ cm}$<br>$A_{\Delta ABC} = \frac{l^2 \sqrt{3}}{4} = \frac{12^2 \sqrt{3}}{4} = \frac{144 \sqrt{3}}{4} = 36 \sqrt{3} \text{ cm}^2$                                                                                                                                                                                  | <b>1p</b><br><br><b>1p</b>                  |
|    | <b>b)</b> $NP$ linie mijlocie în $\Delta VAC \Rightarrow NP \parallel VA, VA \subset (VAM), NP \not\subset (VAM) \Rightarrow NP \parallel (VAM)$<br>$ND$ linie mijlocie în $\Delta AMC \Rightarrow ND \parallel AM, AM \subset (VAM), ND \not\subset (VAM) \Rightarrow ND \parallel (VAM)$<br>$NP \parallel (VAM), ND \parallel (VAM), NP \cap ND = \{N\}, NP, ND \subset (DNP) \Rightarrow (DNP) \parallel (VAM)$ | <b>1p</b><br><br><b>1p</b><br><br><b>1p</b> |

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