

ΠΡΟΣΟΜΟΙΩΣΗ ΕΞΕΤΑΣΕΩΝ
Α' ΛΥΚΕΙΟΥ
ΣΑΒΒΑΤΟ 14 ΑΠΡΙΛΙΟΥ 2018
ΕΞΕΤΑΖΟΜΕΝΟ ΜΑΘΗΜΑ: ΑΛΓΕΒΡΑ

ΑΠΑΝΤΗΣΕΙΣ

ΘΕΜΑ Α

A1. ΘΕΩΡΙΑ

A2. i) Λ, ii) Λ, iii) Λ, iv) Σ

ΘΕΜΑ Β

B1. $\alpha_{10} = \alpha_1 + (10-1)\omega \Leftrightarrow 48 = 3 + 9 \cdot \omega \Leftrightarrow \omega = 5$

B2. $\alpha_{30} = \alpha_1 + (30-1)\omega \Leftrightarrow \alpha_{30} = 3 + 29 \cdot 5 \Leftrightarrow \alpha_{30} = 148$

B3. $\alpha_v = \alpha_1 + (v-1)\omega \Leftrightarrow 73 = 3 + (v-1)5 \Leftrightarrow v = 15$

B4. $S_{20} = \frac{[2\alpha_1 + (20-1)\omega] \cdot 20}{2} = \frac{(2 \cdot 3 + 19 \cdot 5) \cdot 20}{2} = 1010$

ΘΕΜΑ Γ

Γ1. $A=1 \Leftrightarrow 2 - |x-2| = 1 \Leftrightarrow |x-2| = 1 \Leftrightarrow \begin{cases} x - 2 = 1 \Leftrightarrow x = 3 \\ \text{ή} \\ x - 2 = -1 \Leftrightarrow x = 1 \end{cases}$

Γ2. $A > -1 \Leftrightarrow 2 - |x-2| > -1 \Leftrightarrow |x-2| < 3 \Leftrightarrow -3 < x-2 < 3 \Leftrightarrow -1 < x < 5$

Γ3. $A=B \Leftrightarrow |x-2| = |2x-5| \Leftrightarrow \begin{cases} x - 2 = 2x - 5 \Leftrightarrow x = 3 \\ \text{ή} \\ x - 2 = -2x + 5 \Leftrightarrow x = \frac{7}{3} \end{cases}$

Γ4. $A \vee x < 2 \Leftrightarrow x - 2 < 0$

Τότε: $A = 2 - (-x+2) = 2 + x - 2 = x$

ΘΕΜΑ Δ

Δ1. i) $x^2 - x - 6 = 0 \Leftrightarrow x = -2$ ή $x = 3$

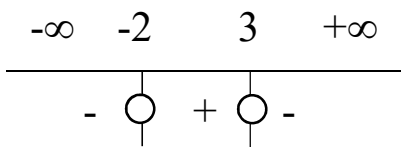
ii) $(x-1)^2 - |x-1| - 6 = 0 \Leftrightarrow |x-1|^2 - |x-1| - 6 = 0$

Θέτουμε: $|x-1| = \omega$ τότε $\omega^2 - \omega - 6 = 0 \Leftrightarrow \omega = -2$ ή $\omega = 3$

Αν $\omega = -2 \Leftrightarrow |x-1| = -2$ Αδύνατη

Αν $\omega = 3 \Leftrightarrow |x-1| = 3 \Leftrightarrow \begin{cases} x - 1 = 3 \Leftrightarrow x = 4 \\ \text{ή} \\ x - 1 = -3 \Leftrightarrow x = -2 \end{cases}$

Δ2. i) $-x^2 + x + 6 < 0$



$x \in (-\infty, -2) \cup (3, +\infty)$

ii) Αρκεί $\Delta < 0 \Leftrightarrow 64 - 16\lambda^2 < 0 \Leftrightarrow 4 - \lambda^2 < 0 \Leftrightarrow \lambda^2 > 4 \Leftrightarrow |\lambda| > 2 \Leftrightarrow \begin{cases} \lambda > 2 \\ \text{ή} \\ \lambda < -2 \end{cases}$