

20/5/23

ΘΕΜΑ Α

| | | | |
|----|---|----|---|
| A1 | Λ | A6 | Β |
| A2 | Σ | A7 | γ |
| A3 | Σ | | |
| A4 | Λ | | |
| A5 | Λ | | |

ΘΕΜΑ Β

B1. ΣΧΟΛΙΚΟ ΕΓΛ. 18L
 B2. ΣΧΟΛΙΚΟ ΕΓΛ. 22

ΘΕΜΑ Γ

| ΕΤΗ | Q | P | ΑΓΓΤ _p | ΔΤ | ΑΓΓΓ |
|------|------|------|-------------------|-------|-------|
| 2010 | (20) | 5 | 100 | 80 | (125) |
| 2011 | 30 | 10 | (300) | (100) | (300) |
| 2012 | 40 | (15) | (600) | 150 | 400 |
| 2013 | (50) | 20 | (1000) | 200 | 500 |

2010: $Q = 100 / 5 = 20$ $ΑΓΓΓ = \frac{100}{80} \cdot 100 = 125$

2011: $ΔΤ = 100$ $ΑΓΓΤ_p = 30 \cdot 10 = 300$

$ΑΓΓΓ = ΑΓΓΤ_p = 300$

2012: $ΑΓΓΤ_p = \frac{400 \cdot 150}{100} = 600$

$P = 600 / 40 = 15$

$$\underline{2013}: \text{ΑΕΠ}_{TP} = \frac{500 \cdot 2\phi}{400} = 1000$$

$$Q = 1000 / 2\phi = 50$$

$$\Gamma 2. \text{ΚΚΤΓΠ}_{\Gamma 13} = \frac{\text{ΑΕΠ}_{\Gamma 13}}{\Gamma 13} = \frac{500}{100} = 5 \text{€}$$

$$\Gamma 3. \text{ΜΕΤΑΒΟΛΗ} = \text{ΑΕΠ}_{\Gamma 13} - \text{ΑΕΠ}_{\Gamma 12} = 500 - 400 = 100 \text{€}$$
$$\% \text{ ΜΕΤΑΒΟΛΗ} = \frac{100}{400} \cdot 100\% = 25\%$$

$$\Gamma 4. \text{ΡΥΘΜΟΣ ΠΛΗΘΥΣΜΟΥ} = \frac{\Delta T_{12} - \Delta T_{11}}{\Delta T_{11}} \cdot 100\% = \frac{150 - 100}{100} \cdot 100\% = 50\%$$

$\Gamma 5.$ ΣΧΟΛΙΚΟ ΣΕΛ 137

$$\Gamma 6. 20\% = \frac{\text{ΑΝΕΡΓΟΙ}}{\text{ΕΡΓ. ΔΥΝ}} \cdot 100 \leadsto 20\% = \frac{1.600.000}{\text{ΕΡΓ. ΔΥΝ}} \cdot 100 \leadsto$$

$$\text{ΕΡΓ. Δ} = 1600000 / 0,2 = 8.000.000$$

$$\text{ΕΡΓ Δ} = 80\% \text{ ΠΛΗΘΥΣΜΟΥ} \leadsto$$

$$8.000.000 = 80\% \text{ ΠΛΗΘΥΣΜΟΥ} \leadsto \text{ΠΛΗΘΥΣΜΟΣ} = \frac{8.000.000}{0,8} \leadsto$$

$$\underline{\underline{\text{ΠΛΗΘΥΣΜΟΣ} = 10.000.000}}$$

ORAMA D

$$\Delta 1. \quad \Gamma A \quad P = 400$$

$$\Sigma D = P \cdot Q_D \rightarrow Q_D = \Sigma D / P \rightarrow Q_D = 120.000 / 400 = \underline{300}$$

$$Q_S - Q_D = 700 \rightarrow$$

$$Q_S - 300 = 700 \rightarrow \underline{Q_S = 1000}$$

$$\Gamma A \quad P = 450$$

$$\Sigma D = P \cdot Q_D \rightarrow Q_D = 67500 / 450 \rightarrow \underline{Q_D = 150}$$

$$Q_S - Q_D = 1050 \rightarrow$$

$$Q_S - 150 = 1050 \rightarrow \underline{Q_S = 1200}$$

| APA | Γx | P | Q_D | Q_S |
|-----|------------|-----|-------|-------|
| | A | 400 | 300 | 1000 |
| | B | 450 | 150 | 1200 |

$$Q_D = a + bP \quad (1)$$

$$\begin{cases} (1) \xrightarrow{A} 300 = a + 400b \\ (1) \xrightarrow{B} 150 = a + 450b \end{cases} \quad \ominus$$

$$\begin{aligned} 150 &= -50b \rightarrow \underline{b = -3} \\ 300 &= a - 400 \cdot 3 \rightarrow \underline{a = 1500} \end{aligned}$$

$$APA \quad \underline{Q_D = 1500 - 3P}$$

$$Q_S = f + gP \quad (2)$$

$$\begin{cases} (2) \xrightarrow{A} 1000 = f + 400g \\ (2) \xrightarrow{B} 1200 = f + 450g \end{cases} \quad \ominus$$

$$\begin{aligned} -200 &= -50g \rightarrow \underline{g = 4} \\ 1000 &= f + 400 \cdot 4 \rightarrow \underline{f = -600} \end{aligned}$$

$$APA \quad \underline{Q_S = -600 + 4P}$$

$$\Delta 2. \quad Q_S = Q_D \rightarrow -600 + 4P_0 = 1500 - 3P_0 \rightarrow$$
$$7P_0 = 2100 \rightarrow \underline{P_0 = 300}$$

$$Q_0 = 1500 - 3 \cdot 300 = \underline{600}$$

Δ3. ↓ τιμή π Σ η ΑΠΑ €x = ↑ προσφορά

$$Q_s' = Q_s + 700 \rightarrow$$

$$Q_s' = -600 + 4P + 700 \rightarrow$$

$$\underline{Q_s' = 100 + 4P}$$

$$\text{QD} \quad Q_s' = Q_D \rightarrow$$

$$100 + 4P_0' = 1500 - 3P_0' \rightarrow$$

$$7P_0' = 1400$$

$$\underline{P_0' = 200}$$

$$Q_0' = 1500 - 3 \cdot 200 = \underline{900}$$

Δ4. $Q_s' = 100 + 4P$ (3)

$$P = 300$$

$$\textcircled{3} \rightarrow Q_s = 100 + 4 \cdot 300 = 1300$$

$$\textcircled{3} \xrightarrow{P=200} Q_s = 100 + 4 \cdot 200 = 900$$

ΑΠΑ $\epsilon_s = \frac{\Delta Q}{Q} \cdot \frac{P}{\Delta P} \rightarrow \epsilon_s = 4 \cdot \frac{300}{1300} = \frac{1200}{1300} = 0,92$