

3.15 1)

$$\alpha) \text{ Είναι } \overrightarrow{Z\Delta} = \overrightarrow{ZA} + \overrightarrow{A\Delta} \stackrel{\overrightarrow{ZA} = -\frac{\overrightarrow{AB}}{2}, \overrightarrow{A\Delta} = \frac{\overrightarrow{AB} + \overrightarrow{A\Gamma}}{2}}{=} -\frac{\overrightarrow{AB}}{2} + \frac{\overrightarrow{AB} + \overrightarrow{A\Gamma}}{2} = -\frac{\vec{\alpha}}{2} + \frac{\vec{\alpha} + \vec{\beta}}{2} = \frac{\cancel{\vec{\alpha}} + \cancel{\vec{\alpha}} + \vec{\beta}}{2} = \frac{\vec{\beta}}{2}$$

$$\beta) \text{ Είναι } \overrightarrow{Z\Delta} = \frac{\vec{\beta}}{2} \Leftrightarrow \overrightarrow{Z\Delta} = \frac{1}{2} \overrightarrow{A\Gamma} \Leftrightarrow Z\Delta // A\Gamma$$

3.15 1)

$$\alpha) \text{ Είναι } \overrightarrow{\Delta E} = \overrightarrow{\Delta A} + \overrightarrow{A E} \stackrel{\overrightarrow{\Delta A} = -\frac{\overrightarrow{AB} + \overrightarrow{A\Gamma}}{2}, \overrightarrow{A E} = \frac{\overrightarrow{A\Gamma}}{2}}{=} -\frac{\overrightarrow{AB} + \overrightarrow{A\Gamma}}{2} + \frac{\overrightarrow{A\Gamma}}{2} = -\frac{\vec{\alpha} + \vec{\beta}}{2} + \frac{\vec{\beta}}{2} = \frac{-\vec{\alpha} - \cancel{\vec{\beta}} + \cancel{\vec{\beta}}}{2} = -\frac{\vec{\alpha}}{2}$$

$$\beta) \text{ Είναι } \overrightarrow{\Delta E} = -\frac{\vec{\alpha}}{2} \Rightarrow \overrightarrow{\Delta E} = -\frac{\overrightarrow{AB}}{2} \Rightarrow Z\Delta // AB$$

3.15 1)

$$\alpha) \text{ Είναι } \overrightarrow{B\Gamma} = \overrightarrow{BA} + \overrightarrow{A\Gamma} = -\vec{\alpha} + \vec{\beta}$$

$$\overrightarrow{ZE} = \overrightarrow{ZA} + \overrightarrow{A E} = -\frac{\vec{\alpha}}{2} + \frac{\vec{\beta}}{2} = \frac{-\vec{\alpha} + \vec{\beta}}{2}$$

$$\beta) \text{ Είναι } \overrightarrow{ZE} = \frac{-\vec{\alpha} + \vec{\beta}}{2} \Rightarrow \overrightarrow{ZE} = \frac{\overrightarrow{B\Gamma}}{2} \Rightarrow ZE // B\Gamma$$