

3.6 1)

$$\overrightarrow{OB} = \frac{1}{2} \overrightarrow{AB} = \frac{\overrightarrow{OA} + \overrightarrow{AB}}{2} \stackrel{\substack{\overrightarrow{OA} = -\vec{\beta} \\ \overrightarrow{AB} = \vec{\alpha}}}{=} = \frac{-\vec{\beta} + \vec{\alpha}}{2}$$

3.6 2)

$$\overrightarrow{AO} = \frac{1}{2} \overrightarrow{AG} = \frac{\overrightarrow{AB} + \overrightarrow{BG}}{2} \stackrel{\substack{\overrightarrow{AB} = \vec{\alpha} \\ \overrightarrow{BG} = \overrightarrow{AO} = \vec{\beta}}}{=} = \frac{\vec{\alpha} + \vec{\beta}}{2}$$

3.6 3)

$$\overrightarrow{OA} = \frac{1}{2} \overrightarrow{BA} = \frac{\overrightarrow{BO} + \overrightarrow{OA}}{2} \stackrel{\substack{\overrightarrow{BO} = -\vec{\alpha} \\ \overrightarrow{OA} = \vec{\beta}}}{=} = \frac{-\vec{\alpha} + \vec{\beta}}{2}$$

3.6 4)

$$\overrightarrow{GO} = \frac{1}{2} \overrightarrow{GA} = \frac{\overrightarrow{GO} + \overrightarrow{OA}}{2} \stackrel{\substack{\overrightarrow{GO} = \overrightarrow{AO} = -\vec{\beta} \\ \overrightarrow{OA} = \vec{\alpha}}}{=} = \frac{-\vec{\beta} - \vec{\alpha}}{2}$$