

2.11 1)

$$\overrightarrow{A\Delta} = \overrightarrow{AB} + \overrightarrow{B\Delta} \stackrel{\overrightarrow{B\Delta} = \overrightarrow{BA} + \overrightarrow{B\Gamma}}{=} \cancel{\overrightarrow{AB}} + \cancel{\overrightarrow{BA}} + \overrightarrow{B\Gamma} = \overrightarrow{B\Gamma}$$

2.11 2)

$$\overrightarrow{B\Gamma} = \overrightarrow{BA} + \overrightarrow{A\Gamma} = \overrightarrow{A\Gamma} - \overrightarrow{AB} \stackrel{\overrightarrow{A\Gamma} = \overrightarrow{AB} + \overrightarrow{A\Delta}}{=} \cancel{\overrightarrow{AB}} + \overrightarrow{A\Delta} - \cancel{\overrightarrow{AB}} = \overrightarrow{A\Delta}$$

2.11 3)

$$\overrightarrow{B\Delta} = \overrightarrow{BA} + \overrightarrow{A\Delta} = \overrightarrow{A\Delta} - \overrightarrow{AB} \stackrel{\overrightarrow{AB} = \overrightarrow{A\Delta} - \overrightarrow{\Gamma A}}{=} \overrightarrow{A\Delta} - (\overrightarrow{A\Delta} - \overrightarrow{\Gamma A}) = \cancel{\overrightarrow{A\Delta}} - \cancel{\overrightarrow{A\Delta}} + \overrightarrow{\Gamma A} = \overrightarrow{\Gamma A}$$