

Electromagnetism H.W. # ④

① Vector calculus

Griffiths $\rightarrow$ 1.11 to 1.19, 1.28, 1.31 to 1.33

$$\text{eqn. (1.29)} \rightarrow \begin{pmatrix} \bar{A}_y \\ \bar{A}_z \end{pmatrix} = \begin{pmatrix} \cos \phi & \sin \phi \\ -\sin \phi & \cos \phi \end{pmatrix} \begin{pmatrix} A_y \\ A_z \end{pmatrix}$$

② Gauss's law

Griffiths $\rightarrow$ 2.9, 2.10, 2.11 to 2.18, 2.20

$$\text{eqn. 2.9} \rightarrow E = \frac{2\lambda}{s}$$

$$\text{flux of vector } \vec{A} = \int_S d\vec{a} \cdot \vec{A}$$

fig 2.27, 2.28 attached.

- ③ Two infinite parallel planes carry equal but opposite uniform charge densities $\pm \sigma$ (see figure). Find the field in region (i), region (ii) and region (iii).

