① $\varepsilon_{r1}=1$ $\quad a_n$ $\quad \vec{E}_1 = 2a_x + a_y + 3a_z$

$\rho_s = 4\varepsilon_0$ $\qquad z=0$

② $\varepsilon_{r2}=2$ $\quad \vec{D}_2 = ? = \vec{D}_{t2} + D_{n2}$

① $a_n = a_z$

② $\vec{E}_1 = \vec{E}_{t1} + \vec{E}_{n1} \rightarrow \begin{cases} E_{n1} = 3a_z \\ E_{t1} = \vec{E}_1 - E_{n1} = 2a_x + a_y \end{cases}$

③ $\vec{E}_{t1} = \vec{E}_{t2} \rightarrow \vec{E}_{t2} = 2a_x + a_y$

④ $D_{n1} - D_{n2} = \rho_s \rightarrow 3\varepsilon_0(1) - D_{n2} = 4\varepsilon_0$ $\quad \boxed{D_{n2} = -\varepsilon_0}$

⑤ $\vec{D}_2 = \vec{D}_{t2} + \vec{D}_{n2} = 2\varepsilon_0(2a_x + a_y) + (-\varepsilon_0)a_z$

$\varepsilon_2 E_{t2}$ $\qquad \vec{D}_2 = \varepsilon_0[4a_x + 2a_y - a_z]$

$\varepsilon_{r1} = 2$ $\qquad \vec{E}_1 = ? = E_{t1} + E_{n1}$

$\rho_s = 3\varepsilon_0$ $\qquad x = 0$

$\varepsilon_{r2} = 1$ $\qquad \vec{D}_2 = (a_x + a_y)\varepsilon_0$ $\quad 2a_x$ $\quad a_y$

$a_n = a_x$ ✓ $\qquad D_{n2}$ $\quad D_{t2}$

$D_{n1} - D_{n2} = \rho_s$

$D_{n1} - \varepsilon_0 = 3\varepsilon_0 \rightarrow \boxed{D_{n1} = 4\varepsilon_0} \rightarrow E_{n1} =$

$E_{n1} = \frac{4\varepsilon_0}{2\varepsilon_0} = 2$

$\vec{E}_{t1} = \vec{E}_{t2} = \frac{D_{t2}}{\varepsilon_2} = \frac{\varepsilon_0 a_y}{\varepsilon_0} = a_y$

$\vec{E}_1 = \vec{E}_{t1} + \vec{E}_{n1} = a_y + 2a_x$

$a_n = a_y$

$f: 2a_x + 3a_z = 5$

$\varepsilon_{r1} = 1$ $\qquad \vec{D}_2 = ?$

$\rho_s = \varepsilon_0$ $\qquad \vec{E}_2 = a_x + a_y$

$\varepsilon_{r2} = 2$

① $a_n = ? = \frac{\nabla f}{|\nabla f|} = \dots$

② $\begin{cases} \vec{E}_{n2} = (\vec{E}_2 \cdot a_n)a_n = \dots \\ \vec{E}_{t2} = \vec{E} - \vec{E}_{n2} = \dots \end{cases}$

$\vec{E}_{t1} = \vec{E}_{t2} = \dots \rightarrow \vec{D}_{t1} = \varepsilon_1 E_{t1} = \dots$

$D_{n1} - D_{n2} = \rho_s \rightarrow D_{n1} = \rho_s + D_{n2} = \rho_s + \varepsilon_2 E_{n2} = \dots$

$\vec{D}_1 = \vec{D}_{t1} + \vec{D}_{n1}$