D CSOPORT: (CA'SD C CSOPORT)

① MEGOLDA'S = 6

② a) LA'SD SZKENNELT FEGYZET
113. OLDAL, 114. OLDAL

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② b) $\underline{N} = \begin{pmatrix} 3 & 4 \\ -2 & -3 \end{pmatrix} \cdot \begin{pmatrix} \alpha_1 \\ \alpha_2 \end{pmatrix} = \begin{pmatrix} -2 & 3 \\ 1 & -2 \end{pmatrix} \cdot \begin{pmatrix} \beta_1 \\ \beta_2 \end{pmatrix} \Rightarrow$

$\underline{\underline{A}} \cdot \underline{\alpha} = \underline{\underline{B}} \cdot \underline{\beta}$

$\Rightarrow \underline{\alpha} = (\underline{\underline{A}})^{-1} \cdot \underline{\underline{B}} \cdot \underline{\beta} = \begin{pmatrix} 3 & 4 \\ -2 & -3 \end{pmatrix} \cdot \underline{\underline{B}} \cdot \underline{\beta} = \begin{pmatrix} -2 & 1 \\ 1 & 0 \end{pmatrix} \cdot \underline{\beta}$

$\Rightarrow \boxed{\begin{aligned} \alpha_1 &= -2\beta_1 + \beta_2 \\ \alpha_2 &= \beta_1 \end{aligned}}$

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③ a) $\underline{u}_1 = \begin{pmatrix} 1/\sqrt{3} \\ 1/\sqrt{3} \\ 1/\sqrt{3} \end{pmatrix} \quad \underline{u}_2 = \begin{pmatrix} -1/\sqrt{2} \\ 0 \\ 1/\sqrt{2} \end{pmatrix} \quad \underline{u}_3 = \begin{pmatrix} 1/\sqrt{6} \\ -2/\sqrt{6} \\ 1/\sqrt{6} \end{pmatrix}$

b) $\underline{\underline{B}}^{-1} = \underline{\underline{B}}^T$

(4) a) $\underline{\underline{Q}} = \begin{bmatrix} 1 & 2 \\ 1 & 1 \end{bmatrix}$ $\underline{\underline{D}} = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$

b) $\underline{\underline{C}}^{2015} = \underline{\underline{C}}$

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2. OLDAC