The move from a structuralist account in which capital is understood to structure social relations in relatively homologous ways to a view of hegemony in which power relations are subject to repetition, convergence, and rearticulation brought the question of temporality into the thinking of structure, and marked a shift from a form of Althusserian theory that takes structural totalities as theoretical objects to one in which the insights into the contingent possibility of structure inaugurate a renewed conception of hegemony as bound up with the contingent sites and strategies of the rearticulation of power.

1. Find the general solution to

\[ \dot{\xi} = A\xi, \]

where

\[ A = \begin{bmatrix} 3 & -2 \\ 4 & -4 \end{bmatrix}. \]

(25 points)
2. Solve

\[ \dot{\xi} = A\xi, \]

where

\[ A = \begin{bmatrix} 1 & 4 \\ -5 & -1 \end{bmatrix} \]

and

\[ \xi(0) = \begin{bmatrix} 1 \\ \frac{1}{4} \end{bmatrix}. \]

(25 points)
3. Solve \( \dot{\xi} = A\xi, \)

where

\[
A = \begin{bmatrix}
  2 & -\frac{1}{2} \\
  \frac{1}{2} & 1
\end{bmatrix}
\]

and

\[
\xi(0) = \begin{bmatrix} 1 \\ 0 \end{bmatrix}.
\]

(25 points)
Intentionally left blank.
4. Consider

\[ A = \begin{bmatrix} 1 & 8 & 0 & 0 \\ 0 & 5 & 10 & 0 \\ 0 & 2 & 6 & 12 \\ 0 & 0 & 0 & 20 \end{bmatrix} \]

and

\[ \xi = \begin{bmatrix} 8 \\ 9 \\ \frac{2}{3} \\ 0 \end{bmatrix} . \]

Is \( \xi \) an eigenvector of \( A \)? If so, what is the corresponding eigenvalue? If not, show that it is not. (25 points)
Intentionally left blank.