Read the material on page 243 of the text pertaining to problems 20-23, which refer to the following system of differential equations. Remember, all answers must be justified.

\[
\frac{d{\bar{Y}}}{dt} = A{\bar{Y}} = \begin{bmatrix} \alpha & \beta \\ \gamma & \delta \end{bmatrix} \begin{bmatrix} b \\ s \end{bmatrix}, \text{ where } {\bar{Y}} = \begin{bmatrix} b \\ s \end{bmatrix}
\]

1. (2) If there are more than the usual number of buyers competing for houses, we would expect the price of houses to go up. This would make it less likely that new potential buyers will start to look for houses. What does this say about the parameter \( \alpha \)?

2. (3) If there are fewer than expected buyers competing for the houses available for sale, then we would expect the price of houses to decrease. This would make it less likely that any potential sellers will place their houses on the market. What does this imply about the parameter \( \gamma \)?

3. (2) By considering the effect on the price of having \( s(t) > 0 \) and the subsequent effect on buyers and sellers, determine the sign of the parameter \( \beta \).

4. (3) Determine the most reasonable sign for the parameter \( \delta \).