$\qquad$

$$
\begin{aligned}
& k_{1} \quad k_{2} \\
& E+S \underset{k_{-1}}{\Leftrightarrow} E S \rightarrow E+P
\end{aligned}
$$

$\mathrm{k}_{1}=110 \mathrm{uM}^{-1} \mathrm{~s}^{-1}$
$\mathrm{k}_{-1}=19.5 \mathrm{~s}^{-1}$
$\mathrm{k}_{2}=13.8 \mathrm{~s}^{-1}$

1. Draw a sketch of what you expect to observe for a plot of initial rates verses [substrate]. Make sure to label the axes and include numerical values.
2. If " $I$ " is a competitive inhibitor of " $E$ " with a $K_{I}$ equal to $2 u M$, draw a sketch of what you expect to observe for a plot of initial rates verses [substrate] in the presence of 2 uM I. Make sure to label the axes and include numerical values.
3. Draw a proposed mechanism of inhibition schematic for I.
