Honors Chemistry Rate Law Homework

1) For 2 A + B → C, we've determined the following experimental data:

Trial	[A] (M)	[B] (M)	Initial rate (M/s)
1	0.0100	0.0100	1.62×10^{-5}
2	0.0200	0.0100	3.24×10^{-5}
3	0.0100	0.0200	6.48×10^{-5}

Using this information, determine the rate law for this reaction, find the reaction order for A and B, and find the overall reaction order.

2) In the reaction A + B → C, we found the following rate data:

Trial	[A] (M)	[B] (M)	Initial rate (M/s)
1	0.026	0.015	2.80×10^{-3}
2	0.026	0.030	5.60×10^{-3}
3	0.052	0.015	11.2×10^{-3}

Using this information, find the overall rate law for this reaction, find the order of the reaction for each reactant, and the overall reaction order.

3) Using the information from the rate equation you found in problem 2, determine the rate constant k for this reaction.