Determining reaction order

Use the isolation method to determine the reaction order for the chemical reaction

$$NO_2 + CO \rightarrow NO + CO_2$$

Rate	$[NO_2]$	$[CO]$
756	0.050	0.050
1278	0.065	0.050
1935	0.080	0.050
756	0.050	0.065
756	0.050	0.080

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For $[NO_2]$ we have

$$a = \frac{\ln\left(\frac{1278}{765}\right)}{\ln\left(\frac{0.065}{0.050}\right)} = \frac{0.525}{0.262} \approx 2.0$$

For [CO] we have 0 since the rate does not change when the CO concentration is changed.

$$v = k[NO_2]^2$$