Spectrophotometry

The writeup gives two different straight-line relationships for analyzing the data — eq 7 on p 67, and the equation in Question 3 on p 71. Both of these involve fitting the reciprocal of the directly measured quantity, $A_x$. While this practice has been standard for at least half a century, it is not the best way to analyze such data. The reason is that if the measured quantity has approximately constant error, its reciprocal will have a strongly varying error. (Show this!) This means that while a fit of $A_x$ itself might be properly unweighted, a fit of its reciprocal should be a strongly weighted fit.

After you have obtained estimates of $\varepsilon_x$ and $K$ from the indicated straight-line fits, try analyzing the data by means of the following nonlinear fit:

$$\frac{A_x}{[I_2]_0} \varepsilon = \frac{\varepsilon_x K [M]_0}{1 + K [M]_0}$$

If you really feel motivated, you might try assigning weights to such a fit, taking into account the estimated uncertainty in your $[I_2]_0$ values.