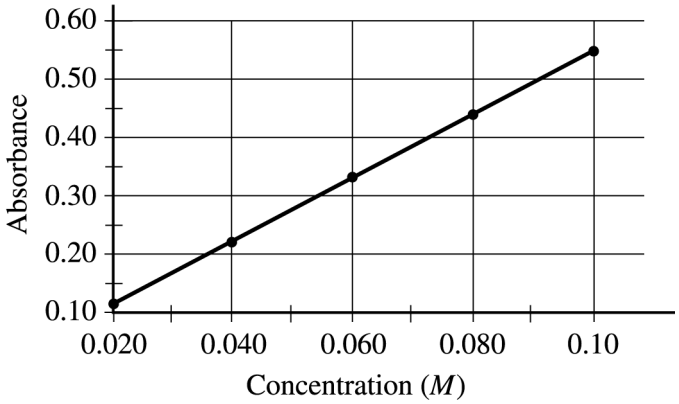
The student measures the absorbance of the 0.020 *M*, 0.040 *M*, 0.060 *M*, 0.080 *M*, and 0.10 *M* solutions. The data are plotted below.



(c) The absorbance of the unknown solution is 0.275. What is the concentration of the solution?

(d) Beer's Law is an expression that includes three factors that determine the amount of light that passes through a solution. Identify two of these factors.

(e) The student handles the sample container (e.g., test tube or cuvette) that holds the unknown solution and leaves fingerprints in the path of the light beam. How will this affect the calculated concentration of the unknown? Explain your answer.

(f) Why is this method of determining the concentration of $CoCl_2$ solution appropriate, whereas using the same method for measuring the concentration of NaCl solution would not be appropriate?