

5. [11 points] Monica has decided to buy a restaurant that costs \$35,000. She gives \$3,600 to Chandler and asks him to find the best way to invest it, so that she will be able to buy the restaurant in at most 2 years. Chandler invests the money for Monica in a certain cryptocurrency, and the value of Monica's investment grows by exactly 10% each month. Let $G(m)$ be the value of Monica's investment (in \$) after m months.

- a. [4 points] Find a formula for the function $G(m)$.

$$G(m) = \underline{\hspace{10cm}}$$

- b. [3 points] Is Monica going to be able to buy the restaurant by the end of the 2 years? Circle your answer. Briefly justify your answer.

YES

NO

CANNOT BE DETERMINED

- c. [4 points] The owner of the restaurant decides to increase the price to \$40,000. If Monica started with the same \$3,600 initial investment, what should the minimum monthly growth rate be for Monica's investment in order for her to be able to buy the restaurant in 2 years? Show all your work, and give your answer in **exact** form.