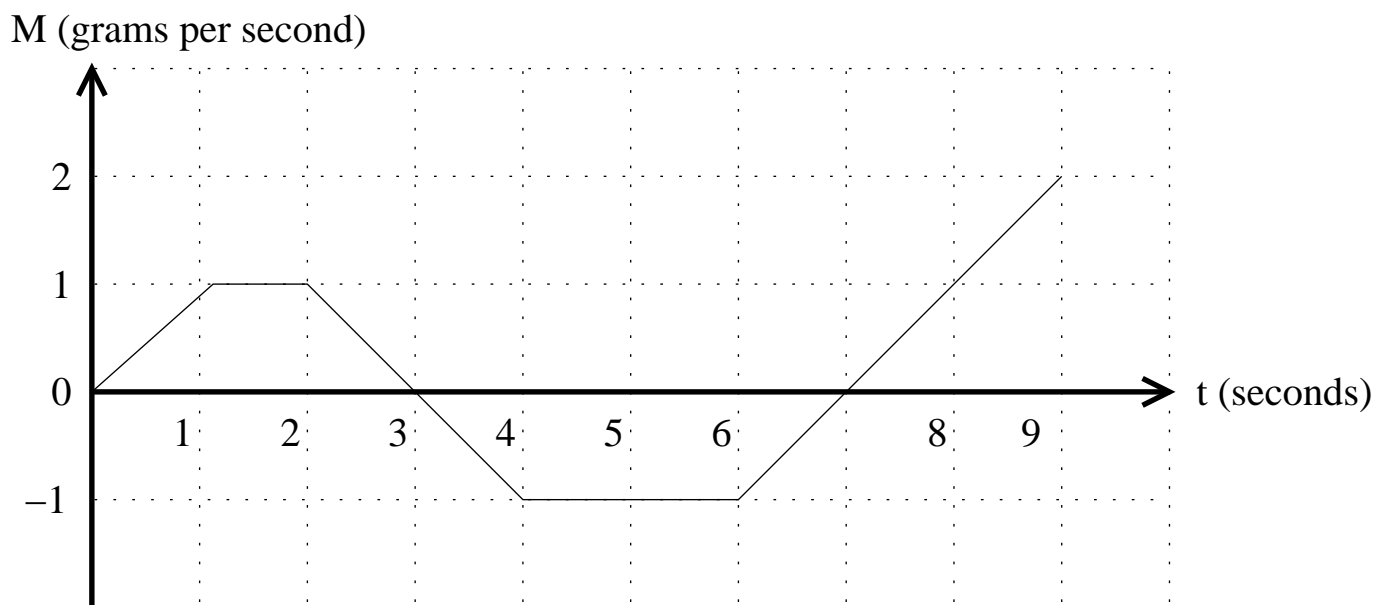**5.** (9 points) A substance, B, is one of several substances involved in a complex chemical reaction. At certain times during this reaction, substance B is produced by the reaction while at other times it plays the role of a reactant and is consumed. Given that enough reactants are present, the rate M, of production of substance B is approximated by the function whose graph is given below.

M (grams per second)

(a) Over what interval(s) is the amount of substance B increasing?

(b) At what time during the reaction is the least amount of substance B present? Explain.

(c) The reaction takes 9 seconds to complete and will not proceed if there is no substance B present. There is a value, V, such that if the reaction begins with V or fewer grams of substance B, then the reaction will not proceed to completion. Find the value of V, and explain your answer.

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