

#### Problem 4

A study reported by Smith (1967), recorded the level of an enzyme, creatinine kinase (CK), for patients who were suspected of having a heart attack. The object of the study was to assess whether measuring the amount of CK on admission to the hospital was a useful diagnostic indicator of whether patients admitted with a diagnosis of a heart attack had really a heart attack. The enzyme CK was measured in 360 patients on admission to the hospital. After a period of time, a doctor reviewed the record of these patients in order to decide which of the 360 patients had actually had a heart attack. The data are given below with CK values given at midpoint of the range of values in one of the 13 classes of values.

<b>CK Value</b>	<b>Number of Patients with Heart Attack</b>	<b>Number of Patients without Heart Attack</b>
20	2	88
60	13	26
100	30	8
140	30	5
180	21	0
220	19	1
260	18	1
300	13	1
340	19	0
380	15	0
420	7	0
460	8	0
500	35	0

Note: Run a logistic regression model and interpret the coefficients