7.5 Logistic Regression - Interpretation of the Coefficients

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Summary	• Interpretation of the coefficients in Logistic Regression
• How do you interpret the coefficients in logistic regression? • If an explanatory variable increases by 1 unit, the odds of $Y = 1$ increases by a factor of ?	**Interpretation of the coefficients** • In a multiple linear regression, the regression coefficients (the β's) are the change in the response variable, with a unit change in the corresponding explanatory variable, keeping all the other explanatory variables constant ("partial slopes"). • For Logistic regression, the interpretation is similar, except for the fact that the change is not linear but in terms of log of odds. • Here, a unit change in the explanatory variable brings about a change of β in the log-odds. • So, if the explanatory variable increases by 1 unit, the odds of Y = 1 increases by a factor of 10^{β}. (If we take the natural the, the odds increase by a factor of e^{β}.)
	Interpretation of the coefficients • For the student placement example, the regression coefficient for the explanatory variable MBA CGPA is $(\beta_1 = 3.27)$. • For one unit increase in the CGPA in the MBA program, the odds of the student getting placed increases by $e^{\beta_1} = e^{3.27} = 26.31$. • The probability of student getting placed has definitely increased. However, note that we have interpreted only the increase in odds and not in the actual probability.