Quantitative Reasoning for Management
Sample Problems

1. Provide a graphical representation of the following regressions, and discuss the simple interpretations of the two coefficients in each regression below.

(a) $$(Kilograms\ of\ Wheat\ Grown\ per\ Acre) = 100 + 10(Kilograms\ of\ Fertilzer\ per\ Acre)$$

Where:

(i) "Kilograms of Wheat Grown per Acre" is a variable representing the kilograms of wheat per acre grown by a farmer, and
(ii) "Kilograms of Fertilizer per Acre" is the amount of fertilizer, in kilograms, applied to an acre of farmland.

(b) $$(GMAT\ Score) = 300 + 25(Hours\ Spent\ Studying)$$

Where:

(i) "GMAT Score" is a variable representing an individual's score on a GMAT test, and
(ii) "Hours Spent Studying" is the amount of time, in hours, committed to studying for the GMAT test.

(c) $$(Weekly\ Gasoline\ Expenditures) = 60 - 0.5(Tax\ Rate\ on\ Gasoline)$$

Where:

(i) "Weekly Gasoline Expenditures" is a variable representing the amount of money a driver spends on gasoline in a given week, and
(ii) "Tax Rate on Gasoline" is the tax rate applied to gasoline. For this variable, the tax rate is specified as an integer. For instance, a tax rate of 1% is recorded as 1 (not 0.01), a tax of rate of 2% is recorded as 2 (not 0.02), and so on.