Many factors can influence the price at which a house is listed for sale on the market. The dataset **CantonHousing.csv** contains such information about a large random sample of homes listed for sale.

Model 3

1. Now put both **Total Rooms** and **Sq. Ft.** (i.e., size) in the model as predictors of **Price (in thousands)**. Report the resulting equation below. This is a *multiple linear regression model*.
2. Contrast the output from this multiple linear regression model with the output from Models 1 and 2. What differences do you notice?

Model 4

1. Now fit a model that uses **Total Rooms** and **Age** in the model as predictors of **Price (in thousands)**. Report the resulting equation below.

1. Which predictors are significant predictors of **Price (in thousands)**? Explain briefly.

1. Predict the list price (in thousands) of a 100 year old house with 6 rooms. *Hint: After you have fit a model, you can use that model to make predictions by going to Stat > Regression > Regression > Predict and entering the predictor values in the appropriate boxes.*
2. Predict the list price (in thousands) of a 100 year old house with 7 rooms.
3. Predict the list price (in thousands) of a 101 year old house with 7 rooms.
4. Interpret the estimated coefficients on **Age** and **Total Rooms**.

Model 3 Output

|  |  |
| --- | --- |
| Model Summary  S R-sq R-sq(adj) R-sq(pred)  43.0687 33.08% 31.08% 26.48%  Coefficients  Term Coef SE Coef T-Value P-Value VIF  Constant 4.3 24.1 0.18 0.860  Sq. Ft 0.0459 0.0117 3.92 0.000 1.45  Total Rooms 4.83 3.67 1.32 0.193 1.45  Regression Equation  Price (in thousands) = 4.3 + 0.0459 Sq. Ft  + 4.83 Total Rooms |  |

Model 4 Output

|  |  |
| --- | --- |
| Model Summary  S R-sq R-sq(adj) R-sq(pred)  43.4184 31.99% 29.96% 25.13%  Coefficients  Term Coef SE Coef T-Value P-Value VIF  Constant 36.2 24.0 1.51 0.135  Total Rooms 15.91 3.18 5.00 0.000 1.07  Age -0.453 0.121 -3.75 0.000 1.07  Regression Equation  Price (in thousands) = 36.2 + 15.91 Total Rooms  - 0.453 Age |  |