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Practice 1.5 (Level 2): Fitting a Spline with Knots

Task

The plot of **EngineSize** that you created in practice 1.4 might indicate a more complex relationship than a quadratic one, and might be overfitting the data. In this practice, you use the the data set **mydata.cars4** to generate plots of **LogPrice** (the dependent variable) versus **EngineSize** by fitting a spline with knots.

Note: Before you complete this practice, you must run the code for practice 1.4 in the same SAS session.

Reminder: Make sure you've defined the **mydata** library.

1. To generate plots of **LogPrice** versus **EngineSize**, modify the PROC SGSCATTER code from step 2 of the level 1 practice as follows:

   - Look up the NKNOTS= option in the online documentation.
   - Add the NKNOTS=5 option to the PBSPLINE option in your program.

   Submit the code.

```
proc sgscatter data=mydata.cars4;
   plot LogPrice*EngineSize / pbspline = (nknots=5);
run;
```

2. How does the graph change?

   Based on the results, the curve becomes smoother. Although the curve looks like a quadratic relationship, remember that it is a piecewise polynomial connected at five knots.

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