**Exercise 9**

A dynamometer can produce accurate Torque and Power curves (Dyno graphs) however, power and torque for certain values of RPM could be approximated via a Data Logger.

Exercise: Calculate the power (in Watts and hp) delivered to the driven wheels of a Dodge Viper GTS-R using the following data extracted from the Engine RPM, Wheel Speed, Long G, Gear Position curves (Figure 4.2). Specifically, for Engine Speed = 5508 RPM, the Vehicle Speed = 230.4 km/h, the Longitudinal acceleration = 0.195 G and the Gear Position = 5.

For the solution of the exercise you may need the following data:

Vehicle: Dodge Viper GTS-R

Mass, m = 1323 kg

Gear ratio, itotal = 3.14 (5th gear)

Rolling radius, Rrolling = 0.365 m

Rolling resistance coefficient, Rx = 0.025

Drag coefficient, CD = 0.601

Frontal vehicle surface, A = 2.3

Additional data:

1 = 0.001341 hp

g = 9.81

Local air density, p = 1.187

Solve the Exercise analytically and using Matlab.