Name _____ Date _____

# 98
# A Very Fast Car

This is the Bugatti Veyron. It is a very fast car that is also very expensive. You can get your own for $2,600,000. It has a weight of 4180 lbs. It can go from 0 to 60 mph in 2.5 seconds. You are a car designer. You would like to figure out how much force would be needed to accomplish this feat. You will use this information in your own car designs. You will be working with forces measured in Newtons, so you will need to have a mass in kg and a speed in m/s.

There are 2.2 lbs. for every 1 kg. What is the mass of this car in kg? Show your work.

There are 1609 m in every 1 mile. Convert 60 mph to a speed in m/s. Show your work.

What is the acceleration of the car? Show your work. Remember ( $v_f = v_i + at$)

What was the force needed? Show your work. Remember (f = ma)

Given this force, how fast would the car be going after 8 seconds?

Given this half of an equation, fill in the information on the other side of the = sign.

Ft =

Where does the force needed to accelerate the car come from?

Where does the car get its energy from?

What are the social, economic, political and environmental impacts involved in obtaining the energy to run automobiles?  Use full sentences in your answer.