**Meets ASE Task:** (A0-F-11) Uses scientific, technical, engineering and mathematics (STEM) principles and reasoning to accomplish assigned tasks.

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_

Time on Task:\_\_\_\_\_\_\_\_\_\_\_\_\_

Make/Model/Year:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

VIN:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Evaluation (Enter number from 4, 3, 2, 1) :\_\_\_\_\_\_\_\_\_

**Brake System Principles**

Page 290

The energy required to slow and/or stop a vehicle depends on two major factors:



* Weight of the vehicle
* Speed of the Vehicle

**[ ]  1.** Check service information and determine

 the weight of the vehicle.

 Weight = \_\_\_\_\_\_\_\_\_\_\_

**[ ]  2.** Add the number of possible passengers (one for each location equipped with seat belts

 times 150 pounds each):

 Number of passengers = \_\_\_\_\_\_ × 150 pounds = \_\_\_\_\_\_\_\_\_\_\_\_\_

**[ ]  3.** Add possible luggage or cargo (see tire pressure decal) weight:

 Luggage or cargo = \_\_\_\_\_\_\_\_

**[ ]  4.** Total vehicle weight = \_\_\_\_\_\_\_\_\_\_\_

**[ ]  5.** Using the formula, determine the kinetic energy at the following speeds:

 weight × speed2 = kinetic energy

 29.9

 30 mph = \_\_\_\_\_\_\_\_\_

 60 mph = \_\_\_\_\_\_\_\_\_