

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

## Force & Acceleration – Ch. 4

### Part A – Force Calculations

1. How much force is needed to accelerate a 1000-kg car at a rate of  $3 \text{ m/s}^2$ ?

GIVEN	WORK
<b>ANSWER:</b>	

2. If a 70-kg swimmer pushes off a pool wall with a force of 250 N, what is her acceleration?

GIVEN	WORK
<b>ANSWER:</b>	

3. Find the mass of a football player who weighs 1250 N.

GIVEN	WORK
<b>ANSWER:</b>	

**Part B** – Read the following statements regarding the examples of the falling elephant and feather from class. Indicate whether each statement is True (T) or False (F).

#### Falling Objects without Air Resistance

4. \_\_\_\_ The elephant has a greater weight and therefore falls faster.  
 5. \_\_\_\_ The elephant and the feather each have the same weight and therefore fall at the same rate.  
 6. \_\_\_\_ The elephant has both greater weight and greater inertia than the feather and therefore falls at the same rate as the feather.

#### Falling Objects with Air Resistance

7. \_\_\_\_ The elephant experiences less air resistance than the feather and therefore falls faster.  
 8. \_\_\_\_ The elephant weighs more than the feather. Since it takes more air resistance to counteract its weight, the elephant fall faster.  
 9. \_\_\_\_ The elephant has a greater acceleration due to gravity than the feather and therefore falls faster.

