**Homework: Newton’s Second Law of Motion**

Directions: Use Newton’s 2nd Law of Motion to answer the following questions. Show your work and you may use back of paper to work out problem but please use provided space to write your answers.

F= M x A

1. A force of 20 N is applied to a box of books with a mass of 4 kg. Find the acceleration of the box of books.

Acceleration = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. A force of 24 N is applied to the same box of books. Find the acceleration of the box of books now.

Acceleration = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Compare answers 1 and 2. What can we say about the acceleration of an object when the force increases? (1 sentence)

4. A car and a truck are on the highway. Both need to accelerate at 7 m/s2 in order to avoid an accident.

a. Find the force acting on the car, which has a mass of 408 kg.

Force = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. Find the force acting on the truck, which has a mass of 2,100 kg.

Force = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. Compare 4a and 4b. What can we say about the force of an object when the mass increases and acceleration remains constant? (1 sentence)