1. You give a shopping cart a shove down the aisle. The cart is full of groceries and has a mass of 18 kg. The cart accelerates at a rate of 3 m/s/s. How much force did you exert on the cart?

2. How much force would it take to push a friend who has a mass of 70 kg. to accelerate at 4 m/s/s?

3. A worker drops his hammer off the roof of a house. The hammer has a mass of 9 kg., and gravity accelerates it at the usual 9.8 m/s/s. How much force does the earth apply to the hammer?

4. The wind pushes a paper cup along the sand at a beach. The cup has a mass of 25 grams ( = ___kg) and accelerates at a rate of 5 m/s/s. How much force (N) is the wind exerting on the cup?

5. How much force is needed to accelerate a 1000-kg. car at a rate of 3 m/s/s?

6. A dancer lifts his partner above his head with an acceleration of 2.5 m/s/s. The dancer exerts a force of 200 N. What is the mass of the partner?

7. If a 70-kg. swimmer pushes off a pool wall with a force of 250 N, at what rate will the swimmer accelerate from the wall?