Calculating Force

Calculate the force in the following problems by using the equation: *F = m a*

1. A man hits a golf ball (0.2 kg) which accelerates at a rate of 20 m/s^2. What amount of force acted on the ball?

2. 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^2. How much force did you exert on the cart?

3. The wind pushes a paper cup along the sand at a beach. The cup has a mass of 0.025 kg and accelerates at a rate of 5 m/s^2. How much force is the wind exerting on the cup?

4. You push a friend sitting on a swing. She has a mass of 50 kg and accelerates at a rate of 4 m/s^2. Find the force you exerted.

5. How much force would it take to push another, larger friend who has a mass of 70 kg to accelerate at the same rate of 4 m/s^2?

6. 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^2. How much force does the earth apply to the hammer?

7. A physical science test book has a mass of 2.2 kg What is the weight (in N) on the Earth?

8. What is the weight on Mars (acceleration due to gravity = 3.7 m/s^2) of a 75Kg person?

9. If the textbook weighs 19.6 newtons on Venus, What is the acceleration of gravity on Venus?