Newton's Laws problems with friction

1. A force of 35 N acts to the right on a 10.0 kilogram mass causing the mass to accelerate at 2.7 m/s^2. What is the magnitude and direction of the force of friction?

2. An elevator has mass of 250 kilograms when empty. A person having mass 75 kilograms is inside it. (A) What tension in the cable is necessary in order to cause the elevator to accelerate upward at 1.5 m/s^2? (B) Assume the elevator cable snaps. How much friction must be supplied by the brakes in order for the elevator to remain stationary? (C) How much friction would it take to let it move downward at a constant velocity?

3. Your weight is 700 N. You are standing on a spring scale inside an elevator. (A) What will the scale read if the elevator is not moving? (B) What will the scale read if the elevator is accelerating upward at 2.0 m/s^2? (C) What will the scale read if the elevator is accelerating downward at 2.0 m/s^2? (D) What will the scale read if the elevator is moving UPWARD at a constant 2 m/s? (E) What will the scale read if the elevator is moving DOWNWARD at a constant 2 m/s?