Student name: \_\_\_\_

## 5-minute Quiz #6

Answer these two questions:

1. An elevator filled with passengers has a mass of  $1.60 \times 10^3$  kg. The elevator accelerates upward from rest at a rate of  $1.80 \text{ m/s}^2$ . Calculate the tension in the cable supporting the elevator. Don't forget the effect of gravity! [5 points]

2. A 100 kg crate is resting on a floor. The coefficient of static friction between the crate and the floor is 0.500 and the coefficient of sliding friction is 0.300. (a) What maximum force can you exert horizontally on the crate without moving it? [2 points] (b) If you continue to exert this force once the crate starts to slip, what will its acceleration then be? [3 points]