Physics
FA 4.2 - Vertical

Name_____ (Do this before the test, **grade it** and **correct it** on the website, turn it in before the test)

Show your work, round to about three total digits, circle your answers, and label them with units. Use the convention that up is positive.

A 1.60 kg mass hangs on a rope.

1. What does the tension need to be in the rope to accelerate the mass upwards at 3.56 m/s/s?

2. What is the acceleration of the mass if the tension in the rope is 19.3 N?

3. What is the tension in the rope if the mass is accelerating downwards at 7.20 m/s/s?

4. What is the acceleration of the mass if the tension in the rope is 11.0 N?

5. The mass is moving upwards at 5.30 m/s and stops in a distance of 2.80 m. What is the tension in the rope as it is stopping?