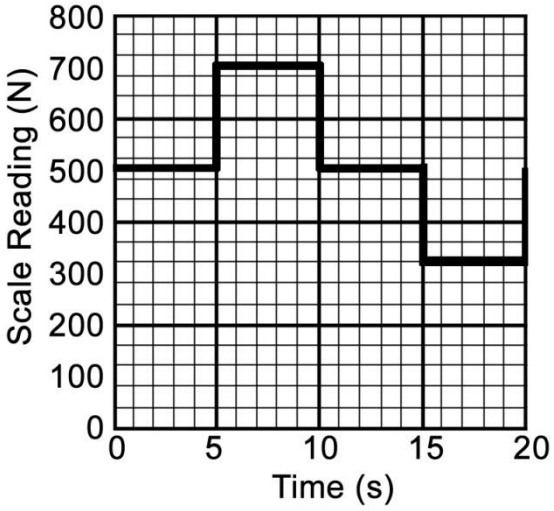
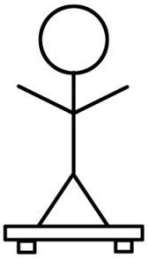
Name: Period:

Life on an Elevator



A student whose normal weight is 500 newtons stands on a scale in an elevator and records the scale reading as a function of time. The data are shown in the graph above. At time = 0, the elevator is at displacement x = 0 with velocity v = 0. Assume that the positive directions for displacement, velocity and acceleration are upward.

a) On the diagram below, draw and label all of the forces on the student at t = 8 seconds.



b) Calculate the acceleration of the elevator for each 5-second interval.

i. indicate your results by completing the following table.

Time interval (s)	0-5	5-10	10-15	15-20
a (m/s^2)				

ii. Plot the acceleration as a function of time on the following graph.