Unit: Newton’s Laws

I. Newton’s 3 Laws
   A. Types of Forces
   B. Drawing Force Diagrams
   C. Quantitative Analysis

II. Newton’s Laws and Pulleys
   A. Assumptions for strings and pulleys
   B. Static Pulleys
   C. Moveable Pulleys

III. Newton’s Laws and Friction
   A. Normal Component of Contact Force
   B. Static Friction
   C. Kinetic Friction

IV. Newton’s Laws and Circular Motion
   A. Centripetal Acceleration
   B. Centripetal Force
You wish to stand on the platform below and be raised up. Which would be easier (for the person pulling)?

a) Pull on the rope yourself.

b) Have your friend (who is just as strong as you) pull on the rope.

c) It does not matter.
The platform below is 100kg. What force must be applied on the end of the rope to hold up the platform? *Hint: draw a force diagram for the platform and lower two pulleys (considering them as one object).*
How do the accelerations of the two masses compare?
Consider the movable pulley to be part of the 5 kg mass. Draw accurate force diagrams for each of the masses below.

- 5 kg
- 8 kg
Write out Newton’s 2\textsuperscript{nd} Law for each of the masses below.