

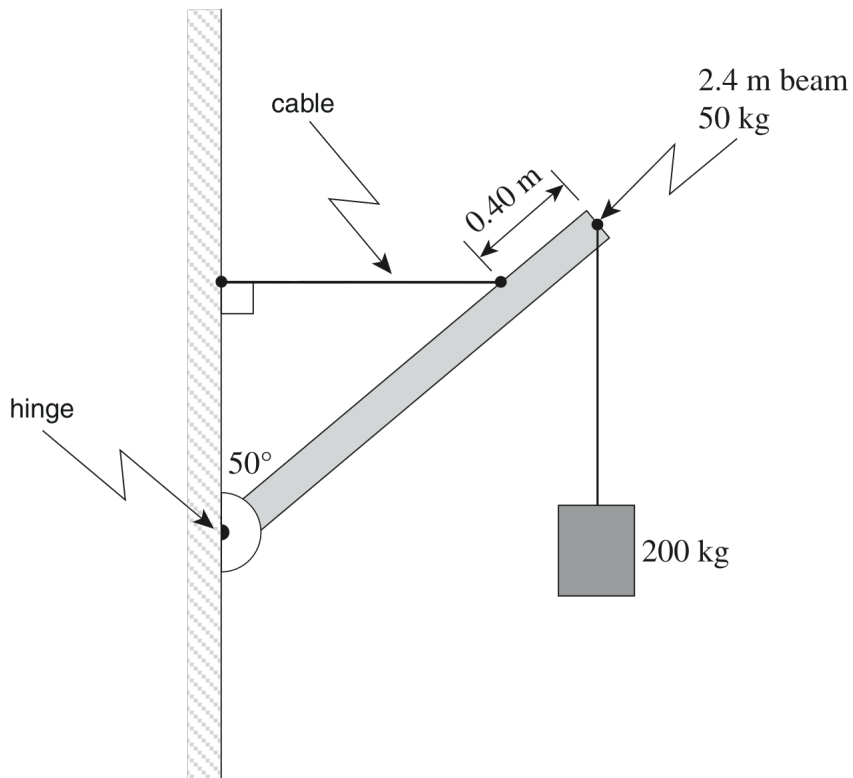
**Physics 12 Unit 5 Static Equilibrium Government Problems Worksheet**

Name: \_\_\_\_\_

1. Torque problem, medium difficulty.

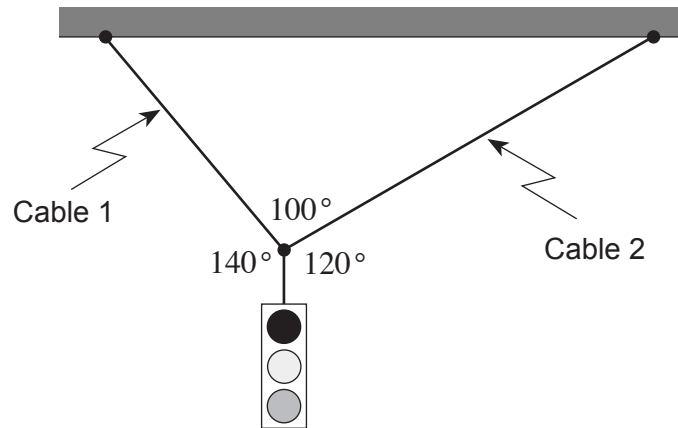
**(6 marks)**

A uniform 50.0 kg beam with a length of 2.4 m supports a 200 kg load. What is the tension in the horizontal cable attached to the beam as shown below?



2. Hanging Mass problem, medium difficulty.

A 35 kg traffic light is suspended from two cables as shown in the diagram.

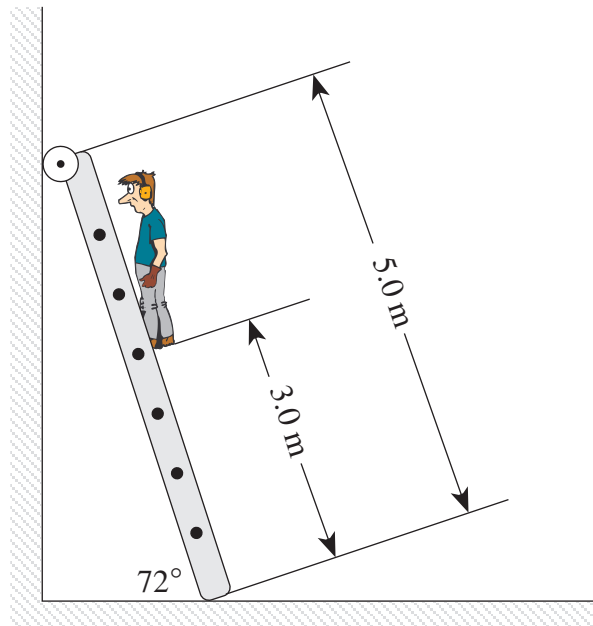


What is the tension in each of these cables?

**(7 marks)**

### 3. Torque Problem, Hard

A 65 kg man is 3.0 m up a 5.0 m, 16 kg ladder leaning against a smooth wall at an angle of  $72^\circ$  as shown below.



What minimum force of friction between the ladder and the floor is required to keep the ladder from sliding? **(5 marks)**

#### 4. Hanging Mass Problem, Med Hard

A 4.0 m long uniform pole with a mass of 15 kg is pivoted at one end and held in position by a horizontal cable at the other end. If a 25 kg mass is suspended from the end of the pole, what is the tension in the horizontal cable? **(7 marks)**

