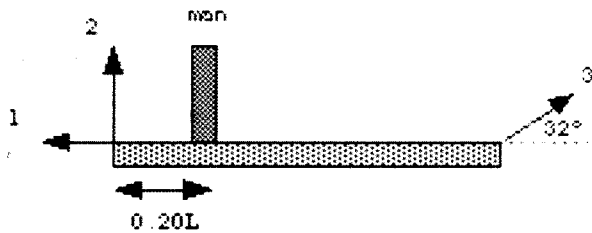


## Physics 10154 - Exam #8C

Answer the following two questions. Be sure to clearly indicate your answer with a circle or box. Show all work. If I cannot see how you arrived at an answer, I will deduct points!

1. A uniform 35-kg plank of length  $L$  is supported by three (helpfully numbered) ropes as shown below. A 75-kg man stands  $1/5$  ( $0.20 L$ ) from one end as shown. What is the tension in each of the three ropes?



2. A uniform sphere starts from rest at the top of a 3.5-meter long ramp inclined  $15^\circ$  above the horizontal. Ignoring any frictional forces, how long (in seconds) does it take for the sphere to reach the bottom of the ramp?