Welcome back, Bill Wiecking

>>Working in AP Physics B (SC651)

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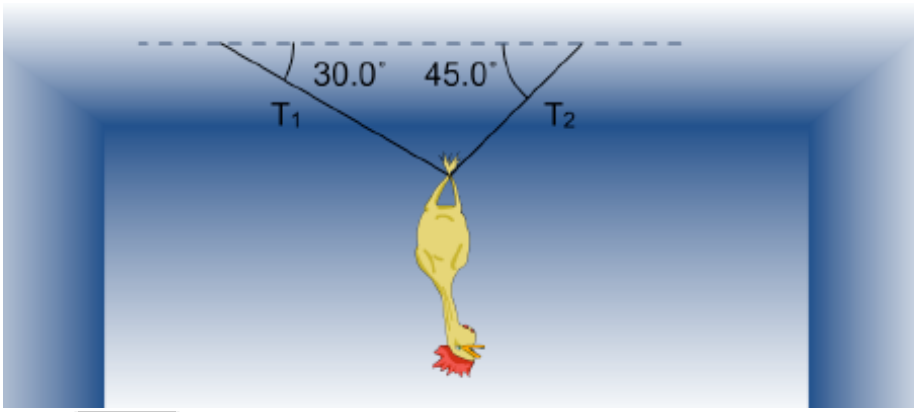
# ch 6 exam

## Chapter 6: Applications of Newton's Laws

### Section 1: Sample problem: a mass on ropes

**6.1.4** **(7.00)** A rubber chicken of mass 0.850 kg is dangling as shown. What is the tension in each string?




$T_1$ = _____ N

$T_2$ = _____ N

### Section 6: Sample problem: airplane at constant velocity

**6.6.1** **(7.00)** A climber of mass 64.8 kg is rappelling down a cliff, but has momentarily paused. She stands with her feet pressed against the icy, frictionless rock face and her body horizontal. A rope of negligible mass is attached to her near her waist, 1.04 m horizontally from the rock face. There is 5.25 m of rope between her waist and where the rope is attached to a chock in the face of the vertical wall she is descending. Calculate the tension in the rope.

N

## Section 7: Sample problem: an inclined plane and static friction

**6.7.2** **(5.00)** A block sits on an inclined plane, which is slowly being raised. The block remains motionless until the angle the plane makes with the horizontal is *angle*°. At this angle, the block begins to slide down the plane. What is the coefficient of static friction between the plane and the block?

## Section 9: Sample problem: an Atwood machine

**6.9.1** **(7.00)** A 10.4 kg block sits on a frictionless horizontal table. The block is attached to a horizontal ideal string that goes over an ideal pulley and is connected to another identical 10.4 kg block that hangs freely. What is the acceleration of the block on the table? State the acceleration as a positive quantity.

$m/s^2$

**6.9.2** **(7.00)** Two blocks are connected by an ideal string that passes over a massless, frictionless pulley. The two blocks hang freely. The first block has a mass of 14.3 kg, and the second block weighs 98.0 N. Determine (a) the magnitude of the blocks' acceleration, (b) the magnitude of the tension in the string.

(a) $m/s^2$

(b) N

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