Strings and Tension
PHYS 2425

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1. Conceptual Questions

Suppose three different blocks are all connected by strings, and are being pulled along the ground plane by someone pulling on them with a rope.
A. Is the tension in all three strings going to be the same? why or why not?

B. Which of the three strings will have the most tension?

C. Why does tension remain constant across and ideal pulley?

2. Newton's Laws

A. A 2.0 kg block rests on a frictionless table and is connected to a 1.0 kg hanging block by a string over a pulley. (a) Find the acceleration of the system. (b) Find the tension in the string.

B. A 4.0 kg block on a frictionless incline at 30° is connected by a string over a pulley to a 2.0 kg hanging block. (a) Determine the acceleration of the system. (b) Determine the tension in the string.