

UOFSC, DEPARTMENT OF PHYSICS & ASTRONOMY.

Graduate student problem competition

SPT 25 (MON)–OCT 1 (SUN) 2023

All graduate students are eligible to participate.

E-mail solution to bazaliy@mailbox.sc.edu by 11:59 PM of the last day

Combination pull

A triangle of mass m_1 can slide without friction on a horizontal surface. On the inclined side of this triangle sits a box of mass m_2 . The incline angle is α . A rope is attached to the box, then goes over a massless pulley located at the top corner of the triangle, and then horizontally. There is no friction between the box and the incline, or in the pulley. Force F is applied to the end of the rope. Find the acceleration of the triangle.

