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Problem

A particle of mass 1 kg located at point A is attached to two strings tied at points C and D shown in the figure. Another string, AB, attached to the particle, passes over a pulley and is used to hold the particle in equilibrium under gravity such that it loses contact with the ground at point A. Find the tension in string AB, T_{AB} .

Hint: Point D is on the *xz* plane and Point C is on the *-y* axis.