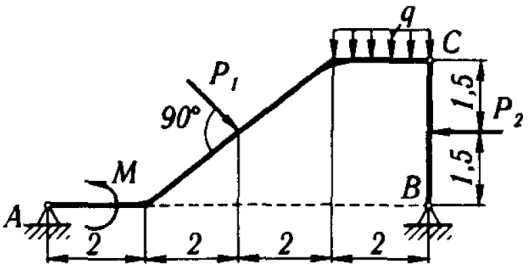
Theoretical Mechanics, Lab 7: STATICS 2

Statics: multiple bodies

INNOPOLIS UNIVERSITY

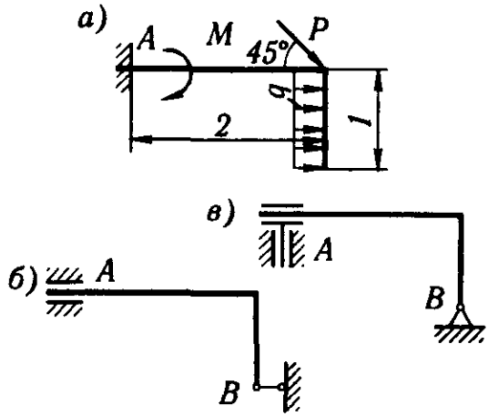
Task 1 (mine)

Find reaction forces in supports of the construction systems. The size of all objects and the loads are given.



Task 2 (yours): solve "б", using ideal beam as 2nd body

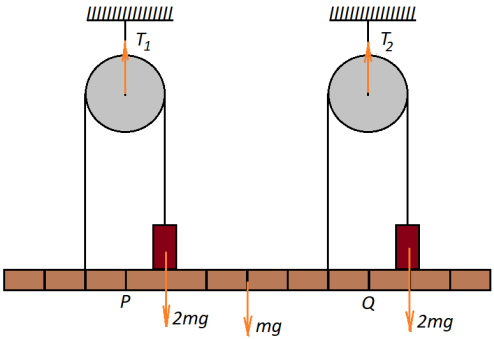
Find reaction forces in supports of the construction systems. The size of all objects and the loads are given.



Task 3 (yours): solution (rus), Collab

A bar with a weight of m and two identical weights of $2m$ each with light threads are attached to two blocks. The system is in equilibrium. There is no friction in the axes of the blocks. Each ”block” on a beam is equal to l.

Determine the string tension forces and the forces with which the stand acts on the weights T.



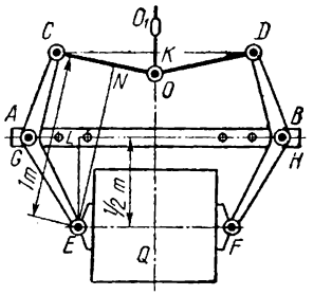
Disney research

Video

Task 4 (yours): M (rus) 4.49

89. A chain OO_1 of a self-gripping device is hinged at O with the rods $OC=OD=60$ cm (Fig. 75). The rods are hinged with two equal bell-cranks CAE and DBF which rotate about points A and B on the connecting bar GH. Two special shoes hinged at E and F hold a load $Q=1000$ kgf by means of friction. The distance between the point E and the bar GH is $EL=50$ cm, and between the point E and the rod OC is $EN=1$ m. The height of the triangle COD is $OK=10$ cm. Find the force which stretches the connecting bar GH. Neglect the weight of the device.

Ans. 6000 kgf.



Deserve “A” grade!

– Oleg Bulichev

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Room 105 (Underground robotics lab)