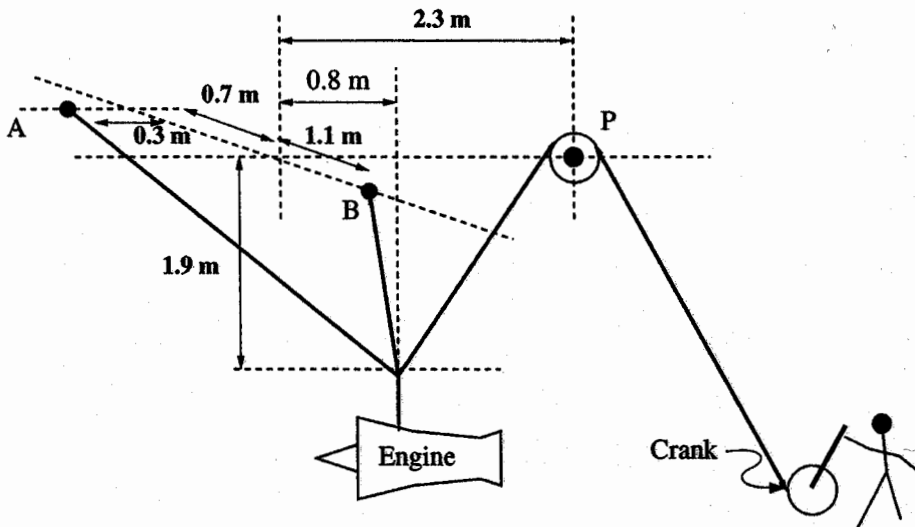


Problem 5 (20 Percent): On the following drawing, a hoist is used to lift a jet engine which is in the shop for overhaul. The hoist consists of 2 fixed-length cables attached to the ceiling of the shop (points A and B), and one cable which is run over a pulley at point P and onto a crank as shown. The cable from the pulley to the crank is vertical. The points A, B and P all lie within the plane of the ceiling. The engine has a mass of 850 kg.

Determine the tension in each of the 3 cables of the hoist.

Note: Be aware that the engine is not located symmetrically between points A and B. The pulley, crank and the engine are co-planar, however. Assume a uniform gravity field.



Problem 5

