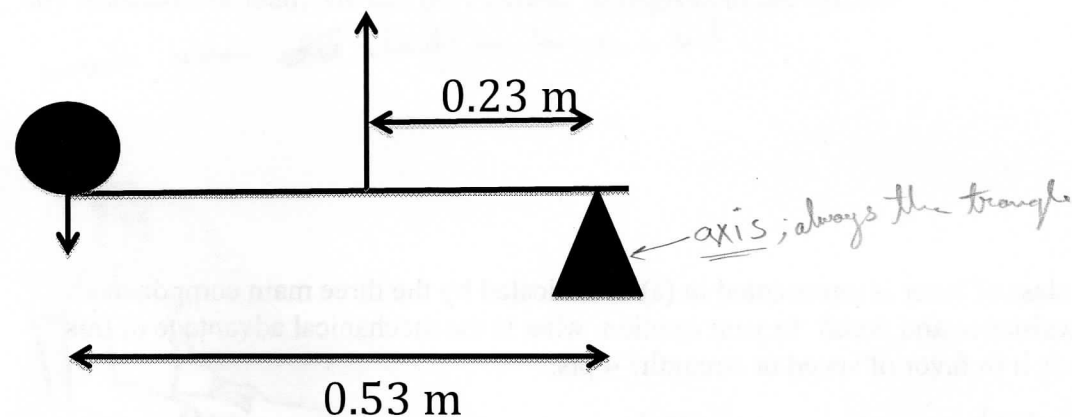


Name:
Student number:

Part II: Forces and Moments

Question 3

a. What is the force acting through (F) required to hold the lever in static equilibrium? Indicate clearly the Force and Resistance vectors due to the weight, the force moment arm and the resistance moment arm, as well as the axis. Note that the weight is 40 Kg and gravity is $g = 9.81 \text{ m/s}^2$. 3 pts.



b. What would be the effect if the force increased 2 folds? Is static equilibrium maintained while the moment arms remain constant, as presented in (a)? Draw a figure and explain. 3 pts.

c. What is the net (combined) moment created in figure (a) if the resistance is now 122 Kg, and the force acting through F is 200N? Is it clockwise or counterclockwise? Moment arms are constant for the force and the Resistance. 3 pts.

moment & torque

$g = 9.81$