

Source of error

[Science](#), [Physics](#)



Torque The measure of a force that is acting on a body such that the force makes the body try to rotate is referred to as torque. The rotation of the object is within a given axis referred to as the pivot point (Benenson and Stöcker). The relationship between force acting on a body, the force acting on the body and the distance of the force from the pivot point is given by the equation below.

Where F is the force resulting into the torque and r is the distance between the location of the force and the pivot point.

An object is acted on by various types of forces. Each of the forces acting on the same body act at different distances from the pivot point. Thus, each force acting on the body produces its own torque. To determine the total torque on the body, the net torque has to be calculated. The net torque is the sum total of all the individual torques acting on the body. However, since this is a rotational equilibrium, the addition of all torques acting on a body results to zero. This implies that net torque does not exist on a body (Benenson and Stöcker).

Sources of error

In the experiment, there is a difference in theoretical and experimental values. Percentage error for F_1 is 0.75 and the percentage error for F_2 is 1.6. The errors are attributed to various reasons. The meter stick may be having a non-uniform distributed mass, thus resulting to the errors. This is due to the fact that the pivot point is usually taken to be at 50 cm, which is not the case since the material is not evenly distributed across the whole length of the meter stick. Also, they may be anomalies in the hunger masses.

References

Benenson, Walter and Horst Stöcker. Handbook of Physics. New haven: Springe, 2002. Print.