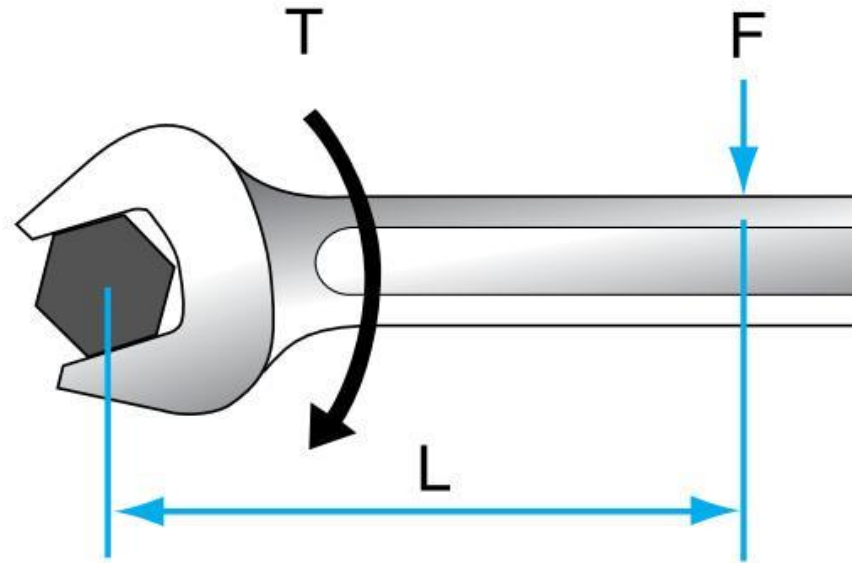


# Torque



$$\text{Torque } T = F \text{ (Force)} \times L \text{ (Length)}$$

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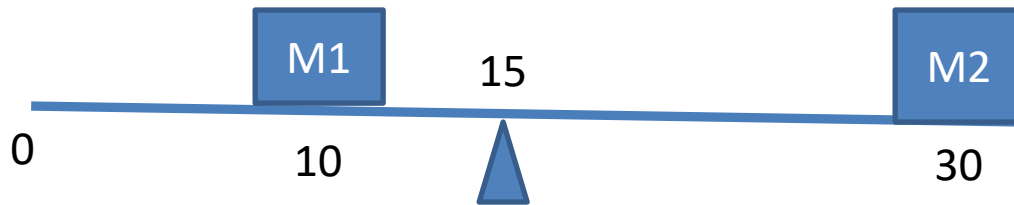
For a lever to be in equilibrium torques on both sides must balance each other.

Units of torque are  $\text{N}\cdot\text{m}$

# Homework 24

## Problem 1

A ruler is used to balance two weights as shown in figure 1. The ruler total length is 30 cm, it is supported at its center (at 15 cm mark). Mass  $M_1=30$  g, is located at 10 cm mark. The other mass,  $M_2$  is at 30 cm mark. Find  $M_2$



**Problem 2 (experimental)** Use a ruler and a pencil to find the ratio of masses of US quarter and US penny. You may use other two coins if you wish, Its OK to use several identical coins. Make a picture of your experiment, describe procedure and give your results.