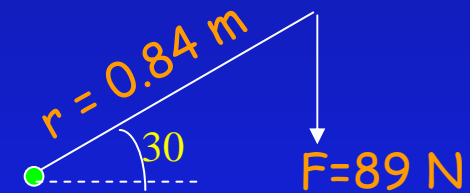# Torque Example and ACT

A person raises one leg to an angle of 30 degrees. An ankle weight (89 N) attached a distance of 0.84 m from her hip. What is the torque due to this weight?

1) Draw Diagram

2) $\tau = F r \sin \theta$

$\qquad = F r \sin(90 - 30) \quad = 65 \text{ N m}$

$r = 0.84 \text{ m}$

30

$F = 89 \text{ N}$

If she raises her leg higher, the torque due to the weight will

A) Increase

B) Same

C) Decrease

Ankle weight

Axis

$30.0°$