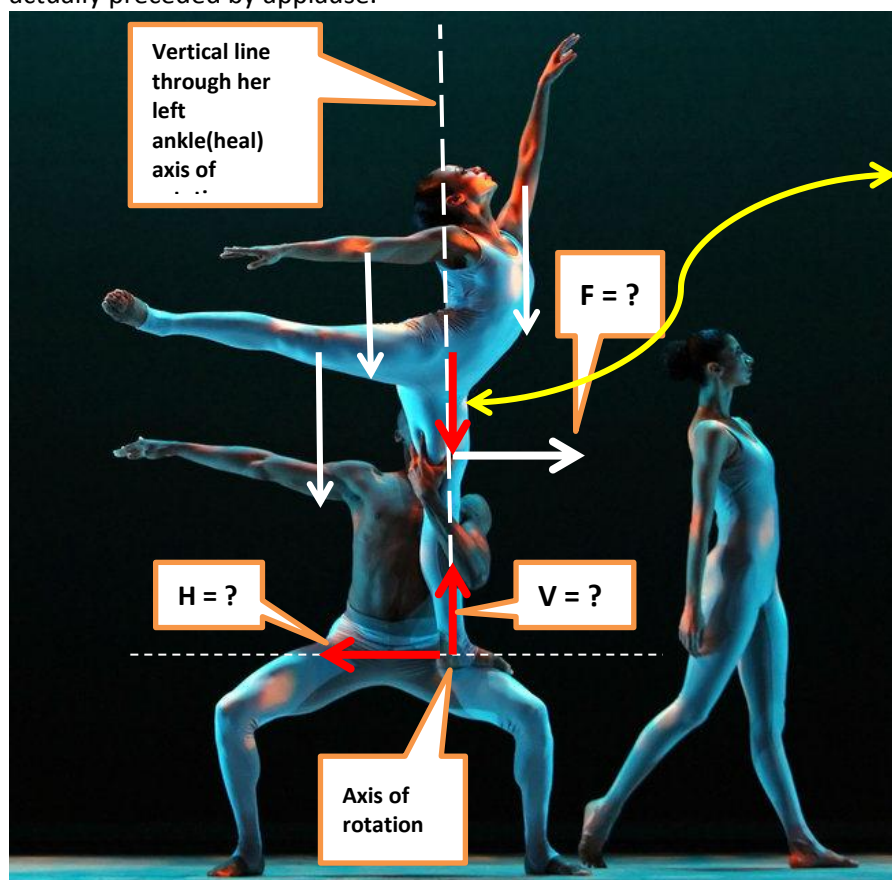


STATIC & ROTATIONAL EQUILIBRIUM Unit 15 Dr. John P. Cise,

Professor of Physics, Austin Com. College, 1212 Rio Grande St., Austin Tx 78701 & NYTimes Jan. 4, 2012 by Alastair Macaulay
Please send an e-mail to Dr Cise on how you used this NYTimes Physics application. Thanks! Dr Cise

Trying Always to Please, Rarely to Challenge

Alvin Ailey American Dance Theater's annual five-week winter season at City Center is always a phenomenal draw. As with few or no other dance companies, all parts of that theater are thronged. The audience arrives in happy anticipation; then it greets everything with joy. Each section of Ailey's "Revelations," the hit of all hits, is not only followed but also actually preceded by applause.



NOTE: The graphic at left shows forces acting "on" Linda's body.

INTRODUCTION: Linda's: torso, head, and left leg weigh 50 lb. Her Left arm weight is 15 lb and it's line of action is 8 inches from the vertical line. Her right arm weight is 15 lb and it's line of action is 12 inches from the vertical line. Her right leg weight is 25 lb and it's line of action is 18 inches from the vertical line. Glenn Allen is exerting a force F on her left leg to the right(as shown) 24 inches from the axis of rotation at her heel. Conditions for static and rotational equilibrium are:

$$\Sigma F_x = 0, \Sigma F_y = 0, \Sigma \tau = 0$$

QUESTIONS: Using the conditions for Static and rotational equilibrium find: F, H and V ?

ANSWERS: $F = 21.25 \text{ lb}$, $V = 105 \text{ lb}$
 $H = 21.25 \text{ lb}$

Glenn Allen Sims (obscured), Linda Celeste Sims and Alicia Graf Mack of the Alvin Ailey American Dance Theater performing in "Streams."

This season was the company's first under its new artistic director, Robert Battle. New works joined the repertory; nine new dancers replaced others; old works were taken out of the Ailey storeroom. The company played down its tendency to overdeliver with Broadway-style facial expressions that, in the later seasons of Judith Jamison's artistic directorate, characterized much of its performing.