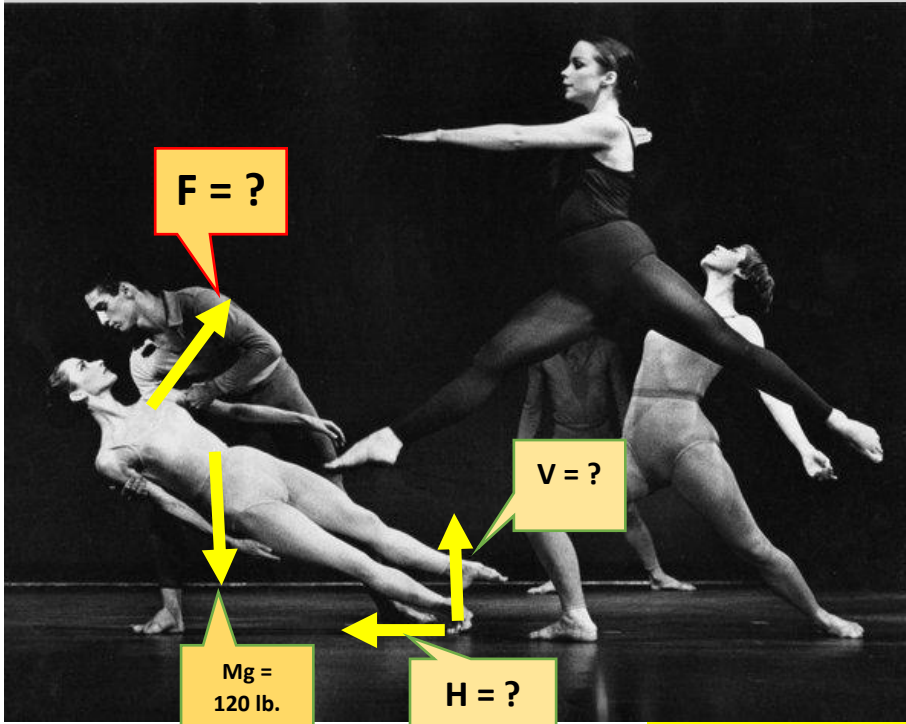


STATIC & ROTATIONAL EQUILIBRIUM

Unit 15, Dr. John P. Cise

Professor of Physics, Austin Com. College, Austin, Texas USA, jpcise@austinctc.edu & NYTimes April 12, 2019 , by Gia Kourlas
Dedicated to Kim Hollister Gram. Austin Ballerina in 1990's

7 Dance Performances to See in N.Y.C. This Weekend



INTRODUCTION: This ballerina is in rotational equilibrium due to negative torque produced by F (at 60° to horizontal) 4 feet from her toe in her right foot. Her center of mass is 3' from her right toes. She is inclined at a 30° angle to the horizontal.

QUESTIONS: (a) Taking axis of rotation to be at her right toes, find $F, V, H?$, (b) Show the three working equations using conditions for Static & rotational equilibrium.

HINTS: When $a_x + a_y = 0$ then $\Sigma F_x = \Sigma F_y = 0$ and $\Sigma T = 0$ if $\alpha = 0$

ANSWERS: $F \sim 77.94 \text{ lb.}$, $V \sim 86.25 \text{ lb.}$
 $H \sim 38.97 \text{ lb.}$

The Merce Cunningham Dance Company performing **"Suite for Five"** in 1964. For Merce Cunningham Celebrations at the Joyce Theater, which starts on Wednesday, Compagnie CNDC-Angers will perform this meditative work from 1956.