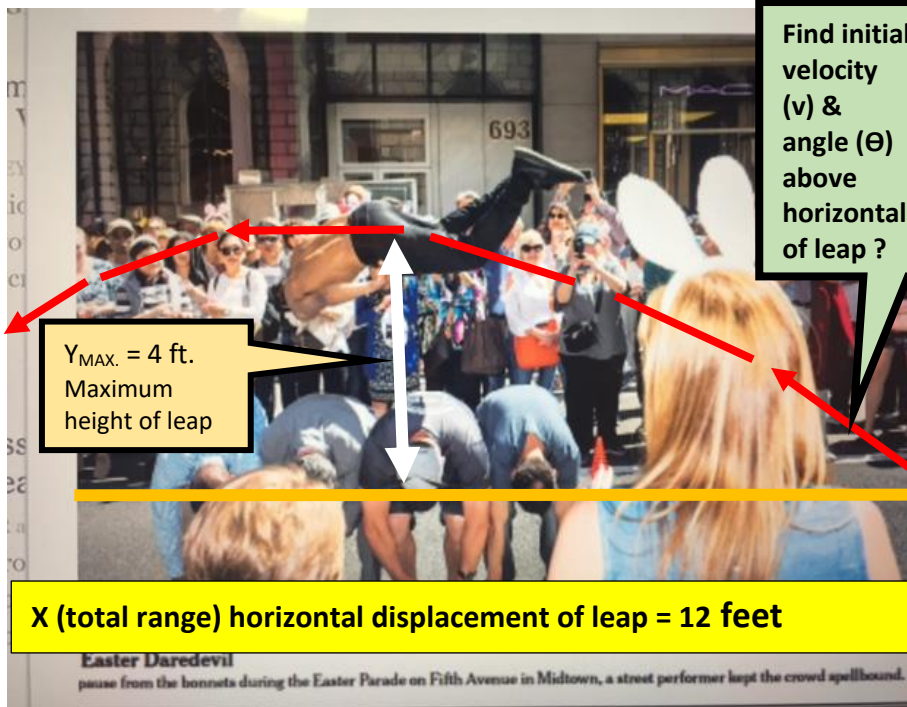# PROJECTILE MOTION
Units 9,4,5 Dr. John P. Cise, Professor of Physics, Austin Com. College, 1212 Rio Grande St., Austin Tx.,78701 jpcise@austincc.edu & New York Times front page April 16, 2017

Find initial velocity (v) & angle (Θ) above horizontal of leap ?

$Y_{MAX.}$ = 4 ft. Maximum height of leap

X (total range) horizontal displacement of leap = 12 **feet**

Easter Daredevil
pause from the bonnets during the Easter Parade on Fifth Avenue in Midtown, a street performer kept the crowd spellbound.

INTRODUCTION: The time to fly horizontally is the same time to go up and down vertically. Thus the time to fall from maximum height is one half the time to fly horizontally as seen at left. The goal in this application is to use projectile concepts to find initial velocity and angle from horizontal of the velocity vector.

QUESTION: (a) Find time of flight?, (b)Find initial velocity & Θ angle above horizontal (in ft./s. & mph). 88 ft./s. = 60 mph

HINTS: Write down initial horizontal and vertical velocity In terms of V & Θ. Break solution into horizontal and vertical parts.

ANSWERS: (a) t_{TOTAL} = 1 s, (b) v = 20 ft./s., 13.64 mph, Θ = 53.13^0