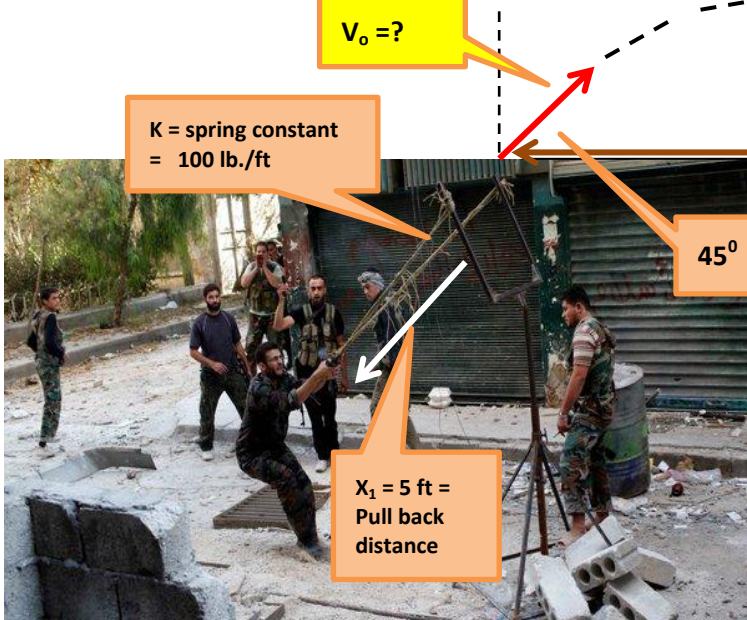


WORK-ENERGY

Unit 10 & 11 Dr. John P. Cise, Professor of Physics, Austin Com.

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U.N. Envoy Seeks Pause in Syria for Holiday



Free Syrian Army fighters launched explosives with a slingshot Tuesday in Aleppo. Rebels now also have more powerful weapons.

INTRODUCTION: These guys make due with what they have in the form of a giant sling shot. The elastic has a spring constant of 100 lb/ft.. It is pulled back 5 ft prior to launching a 4 lb projectile(see graphic at left). The initial angle of projection is 45° .

USING ENERGY CONCEPTS

QUESTIONS: (a) Find mass of the 4 lb projectile? (b) Find elastic potential energy of the giant sling shot? (c) What is the initial velocity V_0 ? (d) What is the projectile's velocity at the highest point? (e) What is maximum height(H) this projectile attained?

EXTRA EXTRA(using projectile concepts):

(f) Assume $Y = 0$. Find X(Horizontal projection) and total time of flight(t)?

HINTS: Horizontal component of velocity stays the same. $PE_{\text{elastic}} = 1/2 KX^2$, $KE = 1/2 mv^2$, $X = vt$, weight = mg
 $Y = v_{0y}t + 1/2 at^2$, $W(\text{work}) = \Delta PE + \Delta KE$, $g = 32 \text{ ft/s}^2$

ANSWERS: (a) 1/8 slug (b) 1250 ft. lb. (c) $V_0 = 141.4 \text{ ft/s}$ or 96.4 mph (d) ~ 100 ft/s (e) 156 ft. (f) $X \sim 250 \text{ ft}$ $t = 2.5 \text{ s}$.

The new [Syria](#) peace envoy from the United Nations and Arab League enlisted [Iran](#)'s help on Monday in an effort to negotiate a cease-fire in observance of a three-day holiday dear to all Muslims, hoping that such a religious reprieve could become the basis for a dialogue. The effort by the envoy, [Lakhdar Brahimi](#), a veteran Algerian statesman, was his first specific proposal for a pause in hostilities in Syria since he replaced Kofi Annan, the former United Nations secretary general, who resigned the Syria diplomatic post in frustration at the end of August. Mr. Brahimi's effort came as new signs emerged from Syria that the 19-month-old conflict was deepening and that combatants on both the government and insurgent sides were using increasingly sophisticated and lethal conventional weaponry.