

ENERGY CONSERVATION

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

College, Austin, Texas, USA jpcise@austincc.edu & New York Times, June 8, 2018 by Sam Roberts. Dedicated to Sir Edward Hillary

Charlotte Fox, 61, Trailblazing Alpinist and Everest Survivor, Dies



Charlotte Fox in 1996 after she was rescued from a fatal blizzard that swept across Mount Everest as she was descending.



INTRODUCTION: This was a very unfortunate accident. Ms. Fox has climbed the highest peaks in the world and a simple stair fall accident caused her death. Very unexpected! Her weight was 150 pounds.

QUESTIONS: (a) Usually steps are 7 inches high. The article below states Ms. Fox fell 77 steps. Find the height she fell in inches and feet?, (b) The article states she fell Four stories(floors). Find the height of each floor?, (c) Does the height of each floor in answer (b) seem reasonable?, (d) Find the gravitational potential energy (U) Ms. Fox had at top of her four stories of stairs prior to her unfortunate fall?,(e) How much work was done in fall?

HINTS: 12 inches/ft., $U = m g h$, $g = 32 \text{ ft./s.}^2$, $W = \Delta U + \Delta K$

ANSWERS: (a) $h = 539 \text{ inches} = 44.92 \text{ ft.}$, (b) height per floor = $\sim 11.23 \text{ ft.}$, (c) Yes! Normal floor heights are 10-12 feet high. Thus, 11.23 ft/floor seems very reasonable. (d) $U = 6737.5 \text{ ft. lb.}$, (e) $Work = W = 6737.5 \text{ ft. lb.}$

Charlotte Fox, who climbed to dizzying heights as the first American woman to conquer three 26,000-foot or higher mountains and once defied a freak blizzard as she descended Mount Everest, died on May 24 in Telluride, Colo. She was 61. **Ms. Fox was**

found dead inside her home in the Rocky Mountains from injuries apparently suffered after slipping down a steep flight of stairs, Emil Sante, the San Miguel County Coroner, said. Ms. Fox, a self-described

Southern debutante who transplanted herself to the Rockies right after college and never left, figured in Jon Krakauer's breathless first-person 1997 chronicle of the Everest climb, "[Into Thin Air](#)." She was descending from the summit when a rogue storm swept across the mountain with wind chills of 100 degrees below zero. The blizzard, which lasted for hours, had killed eight climbers from four expeditions. Ms. Fox nearly froze to death, but she and others were rescued and evacuated by helicopter. (Another version of those fatal climbs was captured in the 2015 3D film "[Everest](#).")

Mountaineering assumes its own momentum, Ms. Fox explained in an interview for the 2008 [PBS program "Frontline"](#). "You've gone so far up the mountain, you've come so far from home, and you spent six months preparing for this goal," she said. "There's no way you're going to turn around unless things are really going south." But [the fatal blizzard struck](#) overnight on May 10, 1996 — her 39th birthday — when she had reached her goal and was already descending. Turning around was no longer an option. "My eyes were frozen," she was quoted as saying in "Into Thin Air." "I didn't see how we were going to get out of it alive." "I didn't think I could endure it anymore," she added. "I just curled up in a ball and hoped death would come quickly." Ms. Fox immortalized her ordeal by choosing a custom Colorado license plate that pre-emptively responded should anyone wonder whether she would climb the world's highest mountain again. It read, "Neverest." Everest was the third jewel in Ms. Fox's triple crown. She also reached the top of two other mountains with heights of at least 8,000 meters, or 26,246 feet: Gasherbrum II, in Pakistan, in 1994 and Cho Oyu, in the Himalayas, in 1995. She was the first American woman credited with surmounting all three.

Ms. Fox was dauntless, but she never discounted the elemental dangers in the challenging avocation she had chosen, or **in her daily slogs as a ski patroller in Telluride and Snowmass, Colo. Returning from dinner, weekend guests discovered**

(((her body at the bottom of a 77-step hardwood staircase connecting the four stories))) of her house on Tomboy Road, which undulates along a mountainside. **Her front door is on the top floor.**