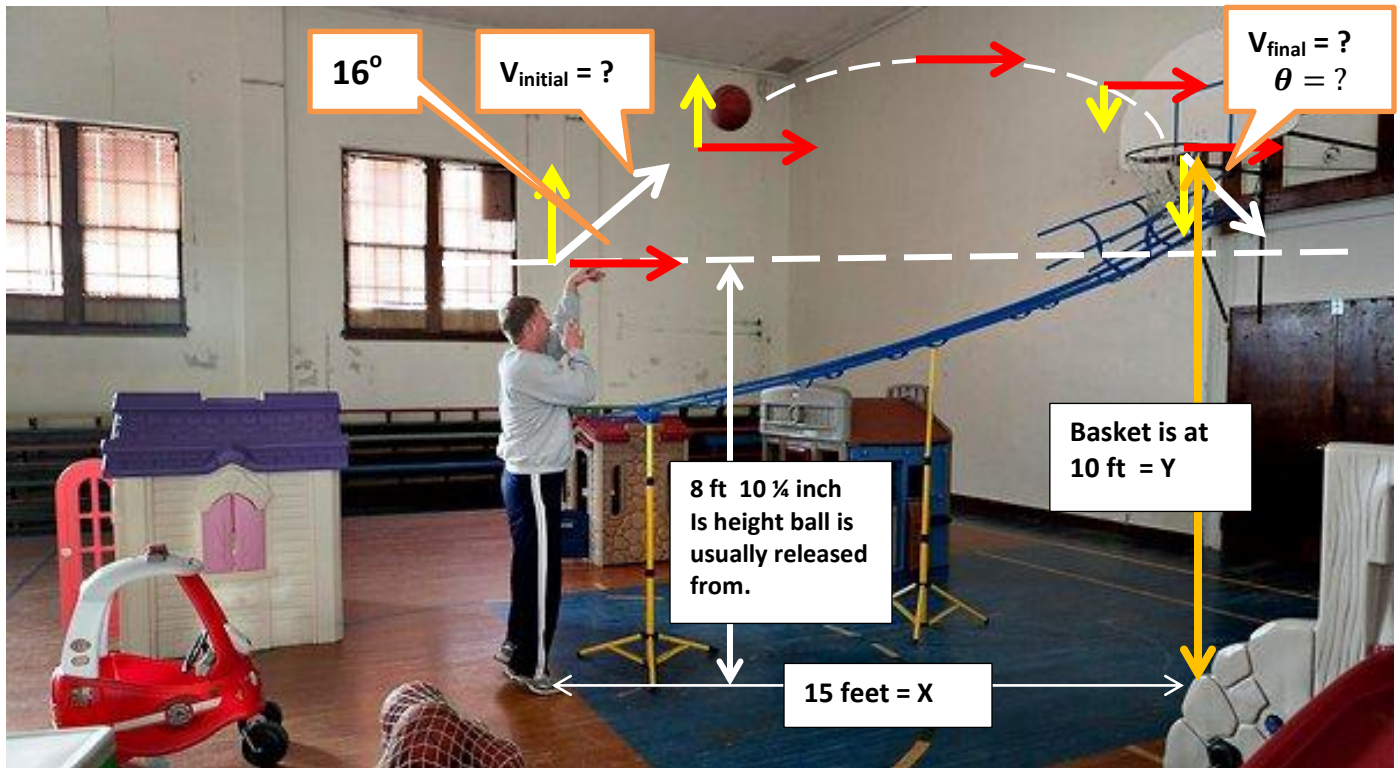


PROJECTILE MOTION

Unit 9 Dr John P. Cise, Professor of Physics, Austin Community College, 1212 Rio Grande St.,

Austin Tx., 78701 jpcise@austincc.edu & NYTimes March15,2012 by John Branch Send Dr Cise an e-mail on how you used this NYTimes Physics application.

No Dribbling and No Passing, but Free Throws Are Nonstop



Bob Fisher has the keys to a school in Vermillion, Kan., so that he can shoot free throws whenever he wants

CENTRALIA, Kan. — With the start of the N.C.A.A. men's basketball tournament this week, the country is once again contemplating the art of the free throw — mainly, why so many of the uncontested 15-foot, 1-point shots are missed.



QUESTIONS: (a) Find the vertical height the ball went in inches? (b) Find the vertical height the ball went in feet? (c) Find the initial velocity and time of flight to basket? (d) Find the final velocity and angle of ball as it passes through the hoop? **HINTS:** 1 ft = 12 inches, break the solution into two parts: vertical and horizontal variables; Why? Acceleration is only vertical. **ANSWERS:** (a) 13.75 inch., (b) 1.1458 ft., (c) 35.14 ft/s or 24 mph., 0.444 s., (d) 33.08 ft/s @ 7.62° below horizontal axis.

Nobody contemplates the lowly free throw like Bob Fisher, a 54-year-old soil conservation technician and failed high school basketball coach. Nobody on the planet shoots them so well, so fast. In the past 26 months, Fisher has set 14 Guinness world records for free-throw shooting. He has made 33 in 30 seconds, 50 in a minute, 92 in two minutes, 448 in 10 minutes. He made 2,371 in an hour — nearly 40 a minute — which he called “pretty close to a superhuman feat.” Fontanella, the author of “The Physics of Basketball,” prescribes placement of the fingers on the ball to complement the direction of the wrist action. “For me, it’s a natural 16-degree inward

position,” Fisher said, flicking his wrist toward the basket. “I measured it.” He set his first record, 50 free throws in a minute, on Jan. 9, 2010. Two months later, he made 88 in two minutes. Still barely noted in his community, Fisher

was invited to the 2011 N.B.A. All-Star Game in Los Angeles, where he created the record for most free throws in a minute while standing on one leg: 49Last December, Fisher made 2,371 shots in an hour, blowing past the old record of 1,968