PROJECTILE MOTION

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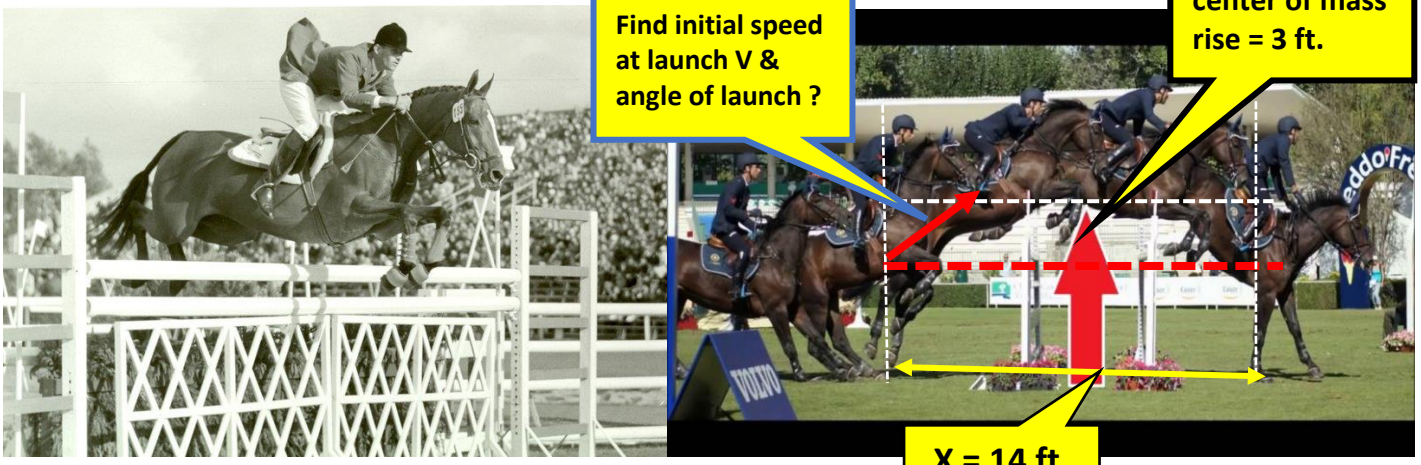
Bill Steinkraus, Equestrian Who Made Olympic History, Dies at 92



Bill Steinkraus riding the horse Sinjon in Aachen, Germany, in 1962.

Bill Steinkraus, one of America's most celebrated horse-show riders and the country's first to win an Olympic individual gold medal in any equestrian discipline, died on Nov. 29 at his home in the Noroton section of Darien, Conn. He was 92.

His death was announced on Thursday by the United States Equestrian Team Foundation. Widely considered **one of the greatest riders in the history of equestrian sports**, Steinkraus made all six United States Olympic teams from 1952 through 1972, missing only the 1964 Games in Tokyo when his horse pulled up lame at the last moment. He won his record-making Olympic individual gold medal, in show jumping, in Mexico City in 1968. He also won team silver medals in Rome in 1960 and in Munich in 1972, and a team bronze in 1952 at Helsinki. His American team finished fifth in 1956 in Melbourne, Australia.

INTRODUCTION: The goal of this application is to find initial speed of jump and angle from horizontal.

QUESTIONS: (a) Find time for half the total time to go the 14 feet horizontally by finding time to fall down the 3 feet from high point of horse jump path seen above ?, (b) Find total time the horse is in the air?, (c) Set up the two working equations(from horizontal and vertical motion of horse) which will allow for the solution for initial v and angle of launch?, (d) Find v & Θ at launch over fence ?

HINTS: sin. Θ / cos.Θ = tan. Θ , equals divided by equals are still equal., g = 32 ft./s.^{2} ,

ANSWERS: (a) $t_{1/2}$ = 0.433 s., (b) t_{total} = 0.866 s., (c) x = v cos.Θ t , y = v sin.Θ t – ½ (32)t^2 (insert proper values for t,x, & y), (d) v = 21.29 ft./s. , Θ = 40.6 degrees above horizontal.