

Venus Williams has one of the fastest serves in Women's Tennis. Suppose that she hits a serve from a height of 10 feet at an initial speed of 176 feet per second and at an angle of 7 degrees below the horizontal. The serve is "in" if the ball clears a 3 foot high net that is 39 feet away and hits the ground in front of the service line 60 feet away. Determine whether the serve is in or out.