The men's horseshoe pitching court has metal stakes 40 feet apart. The stakes stand 18 inches out of the ground.

a. Alan pitches a horseshoe at 50 feet per second, at a 20° angle to the ground. He releases the horseshoe at about 2 feet above the ground and 1.
5 feet in front of the stake at one end. Write parametric equations modeling a typical throw.

**b.** How long is the thrown horseshoe in the air?

c. How close to 40ft is the horizontal component when the horseshoe hits the ground?

d) If the angle remains the same at what velocity should Alan throw the horseshoe to land it 40 feet away from him