1-3. A ball is thrown from a height of 20 m with an initial velocity $v_0 = 10$ m/s and $\theta = 45°$.

1) Determine the x and y coordinates where the ball strikes the slope. Assume $x_A = 17.5$ m.

2) If x_A is a normally distributed random variable $x_A \sim N(17.5, 1^2)$ m, calculate the probability that the ball will not hit the slope.

Solutions: (1) $(x, y) = (19.73, \ 1.49)$ m, (2) $P(x < x_A) = 0.013$