Homework # 2

Question 1

Solve the following problems from your textbook:

2.2 (a), 2.3, 2.4 (a, b, c & d), 2.6, 2.9 (a & b), 4.2 (a, b & c), 4.3 and 4.4

Question 2:

A defense cannon fires balls at initial speed $v_0 = 600$ km/h at angle 60° from the horizontal. Find:

a) Maximum height of the balls.

b) The time needed to reach maximum height.

c) Time of flight.

d) The rang, and,

e) The speed after 1 min of firing.

Question 3:

If the cannon settings were adjusted to give the maximum range R_{max}, show that;

a- The maximum height of the balls in this case is equal to $\frac{1}{4} R_{max}$

b- The time of flight in this case is equal to $\sqrt{2R_{max} / g}$