**Problem 1/Question 1**

Prove that if A contains n items then P(A) contains 2n sets

Example One:

A = {a,b,c}

|A| = 3

P(A) = {0, {a},{b},{c},{a,b}{a,c}{b,c}{a,b,c}} Eight items in the set

|P(A)| = 23 = 8

Example Two:

B = {X, Y}

|B| = 2

P(B) = {0,{x},{y}{x,y}} Four items in the set

|P(B)| = 22 = 4

Example Three:

C = {a}

|C| = 1

P(C) = {0,{a}}

|P(C)| = 21 = 2

**Problem 1/Question 2**

Example One:

First n integers (2, 4, 6)

**2+4+6** = n2 + n = 9 + 3 = 32 + 3

= 12

Example Two:

First n integers (2, 4, 6, 8)

**2+4+6+8** = n2 + n = 16 + 4 = 42 + 4

= 20

Example Three:

First n integers (2, 4)

**2+4** = n2 + n = 4 + 2 = 22 + 2

= 6