Final Exam Question

1. a) How many even integers are in the set {1, 2, 3, … 100}?

**50**

b) How many odd integers are in the set {1, 2, 3, … 100}?

**50**

c) How many ways can two integers be selected from the set {1, 2, 3, … 100} so that their sum is even?

**To get an even sum, both numbers must be even or both must be odd. Therefore,**

***Number of subsets of 2 integers from 1-100 whose sum is even =***

***Number of subsets of 2 even + number of subsets of 2 odd***

***= (50 2) + (50 2) = 2,450***

d) How many ways can two integers be selected from the set {1, 2, 3, … 100} so that their sum is odd?

**(50 1) \* (50 1) = 2,500**

**Or**

**(100 2) – 2,450 = 2,500**