David Evarts  
Bi 621 – Assignment #6 – Plain Text answers  
Due 7/22/19  
Submitted 9/9/19  
  
**Note** – Sections of this assignment that were completed after midnight 7/22/19 are in **Bold Red**.  
  
**Part 0 – Write unit tests**

**Part 1 -Contig length distributions**1-6.) – The scripts were submitted separately.  
7.)

**Part 2 - Velvet  
  
Part3 – Questions** These were completed on notebook paper on7/22/19, but midnight rolled around and I realized that in my unsuccessful push to get the project done on time, I had not yet typed these up or submitted them. Here they are late.  
a.) Total nucleotides for 50 fosmids x 40 kb = 2,000 kb or 2 million nucleotides = genome length  
b.) Expected coverage = Total # nucleotides sequenced (from fastq files)/ genome length = 10,319,124/ 2million approximately = 5 (3,435,956x 2= 10,319,124)  
c.) Given expected coverage from above and total fosmid library, k-mer coverage = 31  
cK = 5 x (Lmean – K +1)  
cK = (5 x(10 million – 50 -1)/10 million approximately = 5  
  
**Part4  
  
Part 5**  
  
**2nd Part3 Questions**