

1 point

1. Consider finding all the YouTube links on a web page. What is the video for the second YouTube link on the web page <http://www.dukelearntoprogram.com/course2/data/manylinks.html> about?

- ☒ Turkeys, Ducks and Quails
- ☐ STEM
- ☐ Walt Disney cartoons
- ☐ Potatoes

1 point

2. Consider the following mystery method.

```
1 public String mystery(String dna) {
2     int pos = dna.indexOf("T");
3     int count = 0;
4     int startPos = 0;
5     String newDna = "";
6     if (pos == -1) {
7         return dna;
8     }
9     while (count < 3) {
10        count += 1;
11        newDna = newDna + dna.substring(startPos,pos);
12        startPos = pos+1;
13        pos = dna.indexOf("T", startPos);
14        if (pos == -1) {
15            break;
16        }
17    }
18    newDna = newDna + dna.substring(startPos);
19    return newDna;
20 }
```

Which of the following best describes what it does?

- ☐ The method mystery is given a string and it returns a string which is the same string but with all the T's removed.
- ☐ The method mystery is given a string and it returns a string which is three copies of the original string.
- ☐ The method mystery is given a string and it returns a string which is the same string but with the first three T's each replaced with two T's.
- ☐ The method mystery is given a string and it returns a string which is the same string but with the each T each replaced with two T's.
- ☒ The method mystery is given a string and it returns a string which is the same string but with the first three T's removed.

1 point

3. Use the following data file to answer this question: <http://www.cs.duke.edu/~rodger/GRch38dnapart.fa>. How many genes are in this file?

69

1 point

4. Use the following data file to answer this question: <http://www.cs.duke.edu/~rodger/GRch38dnapart.fa>. How many genes in this file are longer than 60?

23

1 point

5. Use the following data file to answer this question: <http://www.cs.duke.edu/~rodger/GRch38dnapart.fa>. How many genes in this file have cgRatio greater than 0.35?

40

1 point

6. Use the following data file to answer this question which represents one long strand of DNA: <http://www.cs.duke.edu/~rodger/GRch38dnapart.fa>. How many times does the codon CTG appear in this strand of DNA?

224

1 point

7. Use the following data file to answer this question: <http://www.cs.duke.edu/~rodger/GRch38dnapart.fa>. What is the length of the longest gene in the collection of genes found in this file?

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