

Midterm 1 Review Problems

Problem 1: Find the smallest number that can be evenly divided by all numbers less than or equal to 20.

Problem 2: Find the sum of all numbers between one and a thousand which can be evenly divided by both 3 and 5.

Problem 3: Determine whether or not 104743 is a prime number.

Problem 4: Count the number of times the letter "q" (or either case) appears in the play "Hamlet." You can find the text of the play by going online and searching for "Gutenberg Hamlet."

Problem 5: Find out whether the word "Greg" is a key in the following dictionary:

```
{"Alex": 0, "Carrie":1, "Phil":2, "Rich":3}
```

You may not use the `dictionary.has_key()` function

Problem 6: You have a list with the integers between one and a million in it, distributed at random. All the integers appear once except for one of them, which appears twice. Find out which one.

Note: There is a way to do this without creating another list and without looping through the currently list more than once.