Practice Worksheet

1. Write a function `avoids` that takes a word (a string) and a string of forbidden characters. It returns False if the word contains any forbidden characters and returns True of the word avoids all forbidden characters.

   Hint: Remember you can check to see if something is ‘in’ a string, list, or tuple.

   ```python
def avoids(word, forbidden):
```

2. Write a function `guess_a_number` function that takes a min and a max integer as input. The function generates a random secret integer between min and max (inclusive) and prompts the user to guess the number until they guess correctly. Then print, “That’s it!”.

   Hint 1: The random module contains a function `randint(a,b)` that will generate a random integer between a and b (inclusive).

   Hint 2: The `raw_input` function gets input from the user as a string. Convert it to an integer using the `int` function.

   Sample run of the function:

   ```python
>>> guess_a_number(0,5)
Guess a number between 0 and 5: 0
Nope! Guess again: 4
Nope! Guess again: 3
That’s it!
```

   Solution:

   ```python
def guess_a_number(min, max):
```
3. Write a function `shift_digits` that takes a string as input. The function should return a new string with one added to any digit (‘0’-‘9’) in the string. Any ‘9’’s should wrap back around to ‘0’. Any other characters in the string should remain untouched.

Hint: The character ‘0’ is a 48 on the ascii table. The character ‘9’ is a 57.

Hint 2: Don’t forget the `ord`, `chr`, and `join` functions.

Sample Run:

```python
>>> shift_digits("abc123XYZ99")
'abc234XYZ00'
```

Solution:

```python
def shift_digits(word):
```

4. Write a function that takes, as a parameter, a list of spheres. It will compute the distances between every possible pair of spheres in the list and return a tuple containing copies of the 2 spheres that are farthest apart.