

Built-in Functions Test Solutions

For this test, you should use built-in functions and be able to write the requested functions in one line.

Problem 1

Use `map()` to create a function which finds the length of each word in the phrase (broken by spaces) and return the values in a list.

The function will have an input of a string, and output a list of integers.

```
In [1]: def word_lengths(phrase):  
        return list(map(len, phrase.split()))
```

```
In [2]: word_lengths('How long are the words in this phrase')
```

```
Out[2]: [3, 4, 3, 3, 5, 2, 4, 6]
```

Problem 2

Use `reduce()` to take a list of digits and return the number that they correspond to. For example, `[1,2,3]` corresponds to one-hundred-twenty-three.

Do not convert the integers to strings!

```
In [3]: from functools import reduce  
  
def digits_to_num(digits):  
    return reduce(lambda x,y:x*10 + y,digits)
```

```
In [4]: digits_to_num([3,4,3,2,1])
```

```
Out[4]: 34321
```

Problem 3

Use `filter()` to return the words from a list of words which start with a target letter.

```
In [5]: def filter_words(word_list, letter):  
        return list(filter(lambda word:word[0]==letter,word_list))
```

```
In [6]: words = ['hello', 'are', 'cat', 'dog', 'ham', 'hi', 'go', 'to', 'heart']  
        filter_words(words, 'h')
```

```
Out[6]: ['hello', 'ham', 'hi', 'heart']
```

Problem 4

Use `zip()` and a list comprehension to return a list of the same length where each value is the two strings from L1 and L2 concatenated together with a connector between them. Look at the example output below:

```
In [7]: def concatenate(L1, L2, connector):  
        return [word1+connector+word2 for (word1,word2) in zip(L1,L2)]
```

```
In [8]: concatenate(['A', 'B'], ['a', 'b'], '-')
```

```
Out[8]: ['A-a', 'B-b']
```

Problem 5

Use `enumerate()` and other skills to return a dictionary which has the values of the list as keys and the index as the value. You may assume that a value will only appear once in the given list.

```
In [9]: def d_list(L):  
        return {key:value for value,key in enumerate(L)}
```

```
In [10]: d_list(['a', 'b', 'c'])
```

```
Out[10]: {'a': 0, 'b': 1, 'c': 2}
```

Problem 6

Use `enumerate()` and other skills from above to return the count of the number of items in the list whose value equals its index.

```
In [11]: def count_match_index(L):  
        return len([num for count,num in enumerate(L) if num==count])
```

```
In [12]: count_match_index([0,2,2,1,5,5,6,10])
```

```
Out[12]: 4
```

Great Job!

