```
# 1.
def closest(numLst, n):
  return numLst[min(range(len(numLst)), key = lambda i: abs(numLst[i]-n)
numLst = [4.5, 6.66, 1.23, 4.23, 2002, 9.9]
n = 7.1
res = closest(numLst, n)
print(res)
```

```
6.66
```

```
# 2.
def names():
  s = "Anna is 7 years old, and her sister Olivia is 2 years old. Evelyn
  names_list = re.findall(r'\b[A-Z][a-z]*\b', s)
  return names_list
print(names())
print(len(names()))
```

```
['Anna', 'Olivia', 'Evelyn', 'Paul']
4
```

```
# 3.
def grades():
  listStudents = []
  f = open('grades.txt','r')
  gardeList = f.read().split('\n')
  for grade in gardeList:
    if grade[len(grade)-1] == 'B':
      listStudents.append(grade.split(':')[0])
    return listStudents
lst = grades()
print("The list of students with B grade is:", lst)
print(len(lst))
```

```
# 4.
def logs(filename):
  logs_list = []
  with open(filename) as file:
    data = file.readlines()
    for line in data:
      log_dict = {}
      line = line.split()
      host = line[0]
      name = line[2]
      dateTime = ' '.join(line[3:5])[1:-1]
      request = ' '.join(line[5:8])[1:-1]
      log_dict["host"] = host
      log_dict["user_name"] = name
      log_dict["time"] = dateTime
      log_dict["request"] = request
      logs_list.append(log_dict)
  return logs_list
print(len(logs()))


# 5.
def findall(str, ch):
    index = []
    count = 0
    for i in str:
        if i == ch:
            index.append(count)
        count += 1
    return index
if __name__ == "__main__":
    print(findall("helloworldasdfwa", "a"))
```

```
[10, 15]
```

```
# 6.
def digital_root(n):
    while n >= 10:
        n = sum(int(digit) for digit in str(n))
    return n
n = 4714
print(digital_root(n))
```

```
7
```

```
# 7.
def closest(L, n):
  closest_num = None
  for num in L:
    if num <= n:
      if closest_num is None or num > closest_num:
        closest_num = num
  return closest_num
L = [1, 6, 3, 9, 11]
n = 10
print(closest(L, n))
```

```
9
```