

#1

```
def perfect_number(n):  
    sum = 0  
    for x in range(1, n):  
        if n % x == 0:  
            sum += x  
    return sum == n  
print(perfect_number(6))
```

True

```
(b) def perfect_number(n):  
    sum = 0  
    for x in range(1, n):  
        if n % x == 0:  
            sum += x  
    return sum == n  
print(perfect_number(5))
```

False

#2

```
def isPalindrome(string):  
    left_pos = 0  
    right_pos = len(string) - 1  
  
    while right_pos >= left_pos:  
        if not string[left_pos] == string[right_pos]:  
            return False  
        left_pos += 1  
        right_pos -= 1  
    return True  
print(isPalindrome('aza'))
```

True

#3

```
def pascal_triangle(n):  
    trow = [1]  
    y = [0]  
    for x in range(max(n,0)):  
        print(trow)  
        trow=[l+r for l,r in zip(trow+y, y+trow)]  
    return n>=1  
pascal_triangle(6)
```

```
[1]
```

```
[1, 1]
```

```
[1, 2, 1]
```

```
[1, 3, 3, 1]
```

```
[1, 4, 6, 4, 1]
```

```
[1, 5, 10, 10, 5, 1]
```

```
#4
```

```
import string, sys
def ispangram(str1, alphabet=string.ascii_lowercase):
    alphaset = set(alphabet)
    return alphaset <= set(str1.lower())

print ( ispangram('The quick brown fox jumps over the lazy dog'))
```

```
True
```

```
#5
```

```
items=[n for n in input().split('-')]
items.sort()
print('-'.join(items))
```

```
green-red-black-yellow-white
```

```
black-green-red-white-yellow
```

```
#6
```

```
def student_data(student_id, **kwargs):
    print(f'\nStudent ID: {student_id}')
    if 'student_name' in kwargs:
        print(f"Student Name: $ {kwargs['student_name']}")

    if 'student_name' and 'student_class' in kwargs:
        print(f"\nStudent Name: $ {kwargs['student_name']}")
        print(f"Student Class: $ {kwargs['student_class']}")

student_data(student_id='SV12', student_name='Jean Garner')

student_data(student_id='SV12', student_name='Jean Garner', student_class
='V')
```

```
Student ID: SV12
```

```
Student Name: $ Jean Garner
```

Student ID: SV12

Student Name: \$ Jean Garner

Student Name: \$ Jean Garner

Student Class: \$ V