Program 1:

```
def factorial(n):
    if n == 0:
        return 1
    else:
        return n * factorial(n - 1)
def is_strong_number(num):
    temp = num
    total = 0
    while temp > 0:
        digit = temp % 10
        total += factorial(digit)
        temp //= 10
    return total == num
number = int(input("Enter a number to check if it's a strong number: "))
if is_strong_number(number):
    print(number, "is a strong number.")
else:
    print(number, "is not a strong number.")
```

PROGRAM 2:

```
def is_leap_year(year):
    if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
        return True
    else:
        return False
year = int(input("Enter a year to check if it's a leap year: "))
if is_leap_year(year):
```

```
    print(year, "is a leap year.")
else:
    print(year, "is not a leap year.")
```

PROGRAM 3:

```
def find_2nd_highest(arr):
    sub_array = arr[2:7]
    sub_array.sort(reverse=True)
    return sub_array[1]
input_array = [2, 4, 5, 3, 6, 7, 9, 4, 5, 6]
second_highest = find_2nd_highest(input_array)
print("Sub array:", input_array[2:7])
print("2nd Highest element:", second_highest)
```

PROGRAM 4:

```
def find_closing_parenthesis(sentence, opening_position):
    stack = []
    for i in range(opening_position, len(sentence)):
        if sentence[i] == '(':
            stack.append('(')
        elif sentence[i] == ')':
            stack.pop()
            if len(stack) == 0:
                return i
sentence = "Sometimes (when I nest my parenthesis (also called parentheticals) too many times (like this (and this))) they get quite confusing."
opening_position = 10
closing_position = find_closing_parenthesis(sentence, opening_position)
```

```
print("Closing parenthesis position:", closing_position)
```