

```
# 1. Sum of Two Numbers
a = 7
b = 5
sum_result = a + b
print("Sum:", sum_result) # Output: Sum: 12

# 2. Odd or Even
num = 10
if num % 2 == 0:
    print("Even") # Output: Even
else:
    print("Odd")

# 3. Factorial Calculation
n = 5
factorial = 1
for i in range(1, n + 1):
    factorial *= i
print("Factorial:", factorial) # Output: Factorial: 120

# 4. Fibonacci Sequence
n = 7
fib = [0, 1]
for i in range(2, n):
    fib.append(fib[i - 1] + fib[i - 2])
print("Fibonacci:", fib[:n]) # Output: Fibonacci: [0, 1, 1, 2, 3, 5, 8]

# 5. Reverse a String
s = "hello"
print("Reversed:", s[::-1]) # Output: Reversed: olleh

# 6. Palindrome Check
s = "madam"
is_palindrome = s == s[::-1]
print("Palindrome:", is_palindrome) # Output: Palindrome: True

# 7. Leap Year Check
year = 2024
is_leap = (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0)
print("Leap Year:", is_leap) # Output: Leap Year: True

# 8. Armstrong Number
num = 153
digits = list(map(int, str(num)))
power = len(digits)
```

```

is_armstrong = sum([d**power for d in digits]) == num
print("Armstrong:", is_armstrong) # Output: Armstrong: True

# 9. Caesar Cipher - Custom Encryption/Decryption
def encrypt(text, shift):
    result = ""
    for char in text:
        if char.isalpha():
            base = ord('A') if char.isupper() else ord('a')
            result += chr((ord(char) - base + shift) % 26 + base)
        else:
            result += char
    return result

def decrypt(text, shift):
    return encrypt(text, -shift)

message = "Hello World"
shift = 3
encrypted = encrypt(message, shift)
decrypted = decrypt(encrypted, shift)
print("Encrypted:", encrypted) # Output: Encrypted: Khoor Zruog
print("Decrypted:", decrypted) # Output: Decrypted: Hello World

```