Core Python Challenges - Solutions

1■■ Sum of Two Numbers

```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
print("Sum:", a + b)
```

2■■ Odd or Even Checker

```
num = int(input("Enter a number: "))
if num % 2 == 0:
    print(num, "is Even")
else:
    print(num, "is Odd")
```

3■■ Factorial Calculation (Using Loop)

```
num = int(input("Enter a number: "))
fact = 1
for i in range(1, num + 1):
    fact *= i
print("Factorial of", num, "is", fact)

# Alternatively, using recursion
def factorial(n):
    return 1 if n == 0 else n * factorial(n - 1)

num = int(input("Enter a number: "))
print("Factorial:", factorial(num))
```

4■■ Fibonacci Sequence

```
n = int(input("Enter how many Fibonacci numbers to generate: "))
a, b = 0, 1
print("Fibonacci sequence:")
for _ in range(n):
    print(a, end=" ")
    a, b = b, a + b
```

5■■ String Reverse

```
text = input("Enter a string: ")
print("Reversed string:", text[::-1])
```

6■■ Palindrome Check

```
text = input("Enter a word: ")
if text == text[::-1]:
    print("Palindrome")
else:
    print("Not a palindrome")
```

7■■ Leap Year Check

```
year = int(input("Enter a year: "))
if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
    print(year, "is a Leap Year")
else:
    print(year, "is not a Leap Year")
```

8■■ Armstrong Number

```
num = int(input("Enter a number: "))
order = len(str(num))
sum_of_powers = sum(int(digit) ** order for digit in str(num))
if num == sum_of_powers:
    print(num, "is an Armstrong number")
else:
    print(num, "is not an Armstrong number")
```