Writing and Executing Shell Scripts I/O Variables and Operators (Part C)

Task#1

```bash
#!/bin/bash

# Function to find the sum of the digits in an integer
sum_digits() {
  # Initialize sum to 0
  sum=0

  # Iterate through each digit in the integer
  while [ $1 -gt 0 ]; do
    # Add the last digit to the sum
    sum=$((sum + (1 % 10)))

    # Remove the last digit from the integer
    1=$((1 / 10))
  done

  # Return the sum
  echo $sum
}

# Test the function
echo $(sum_digits 12345)
```

Task#2

```bash
#!/bin/bash

# Function to check if an integer is a palindrome
is_palindrome() {
  # Convert integer to string
  local str=$1
  local len=${#str}

  # Iterate through characters in string
  for (( i=0; i<len/2; i++ )); do
    # Check if corresponding characters are not equal
    if [ "${str:i:1}" != "${str:len-i-1:1}" ]; then
      # Return false
      echo "false"
      return
    fi
  done

  # Return true
  echo "true"
}

# Test the function
echo $(is_palindrome 12321)
echo $(is_palindrome 12345)
```

```
sam@sam-VirtualBox:~/Desktop$ sudo chmod 777 scripts
sam@sam-VirtualBox:~/Desktop$ sudo mv scripts /usr/bin
sam@sam-VirtualBox:~/Desktop$ scripts
true
false
sam@sam-VirtualBox:~/Desktop$
```

Task#3

```bash
#!/bin/bash

# Function to write an integer in reverse
reverse_integer() {
  # Convert integer to string
  local str=$1
  local len=${#str}
  local reversed=""

  # Iterate through characters in string in reverse order
  for (( i=len-1; i>=0; i-- )); do
    # Append character to reversed string
    reversed="$reversed${str:i:1}"
  done

  # Return reversed string
  echo "$reversed"
}

# Test the function
echo $(reverse_integer 12345)
```

```
sam@sam-VirtualBox:~/Desktop$ sudo chmod 777 scripts
sam@sam-VirtualBox:~/Desktop$ sudo mv scripts /usr/bin
sam@sam-VirtualBox:~/Desktop$ scripts
54321
sam@sam-VirtualBox:~/Desktop$
```