

i) Write a shell script that will generate and print all prime numbers within the given range.

Example:

Input=10

20

Output= 11

13

17

19

Code

```
echo "enter starting the range"
read s
echo "enter ending the range"
read e
echo "the prime nos are:"
for (( i = $s+1 ; $i <= $e ; i = $i + 1 ))
do
    c=0
    for (( j = 1 ; $j <= $i ; j = $j + 1 ))
    do
        if [ `expr $i % $j` -eq 0 ]
        then
            c=$((c+1))
        fi
    done
    if [ $c -eq 2 ]
    then
        echo $i
    else
        continue
    fi
done
```

OUTPUT

```
saurjya@saurjya:~/Desktop/Saurjya OS/Day2$ ./Scrip1.sh
enter starting the range
10
enter ending the range
20
the prime nos are:
11
13
17
19
saurjya@saurjya:~/Desktop/Saurjya OS/Day2$
```

ii) Write a shell program that accepts a number and performs the basic operations [1. Add 2. Subtract 3. Multiply 4. Division default. Wrong input] of a calculator.

example:

Input = 3

5

1

output =8

Code

```
echo "Enter 1 for Addition 2 for Subtraction 3 for Multiplication 4 for Division 5 to Quit"
read a
case "$a" in
    "1") echo "Enter the Addends."
        read b
        read c
        echo "The Result = "`echo " $b + $c " | bc`
        ;;
    "2") echo "Enter the Subtrahends."
        read b
        read c
        echo "The Result = "`echo " $b - $c " | bc`
        ;;
    "3") echo "Enter the Multiplicands."
        read b
        read c
```

```

        echo "The Result = "`echo " $b * $c " | bc`
;;
"4") echo "Enter the Divisors."
    read b
    read c
    echo "The Result = "`echo " $b / $c " | bc`
;;
"*") echo "Quit."
    exit 0
;;
esac

```

Output

```

saurjya@saurjya: ~/Desktop/Saurjya 05/Day2$ ./scrip2.sh
Enter 1 for Addition 2 for Subtraction 3 for Multiplication 4 for Division 5 to Quit
1
Enter the Addends.
5
6
The Result = 11
saurjya@saurjya:~/Desktop/Saurjya 05/Day2$ ./scrip2.sh
Enter 1 for Addition 2 for Subtraction 3 for Multiplication 4 for Division 5 to Quit
2
Enter the Subtrahends.
6
5
The Result = 1
saurjya@saurjya:~/Desktop/Saurjya 05/Day2$ ./scrip2.sh
Enter 1 for Addition 2 for Subtraction 3 for Multiplication 4 for Division 5 to Quit
3
Enter the Multiplcands.
5
1
The Result = 5
saurjya@saurjya:~/Desktop/Saurjya 05/Day2$ ./scrip2.sh
Enter 1 for Addition 2 for Subtraction 3 for Multiplication 4 for Division 5 to Quit
4
Enter the Divlors.
7
3
The Result = 2
saurjya@saurjya:~/Desktop/Saurjya 05/Day2$ ./scrip2.sh
Enter 1 for Addition 2 for Subtraction 3 for Multiplication 4 for Division 5 to Quit
5
saurjya@saurjya:~/Desktop/Saurjya 05/Day2$ 

```

iii) Write a shell script to evaluate the following

$$\sum \log_{10} (x) \text{ for } x = 1 \text{ to } N \text{ (} N > 1 \text{)}$$

The input contains the upper limit N.

The output must be scaled up to 3 decimal places.

Note: Enter the input directly as shown below without using any print statement to prompt user for entering input.

Example 1

Input:

4

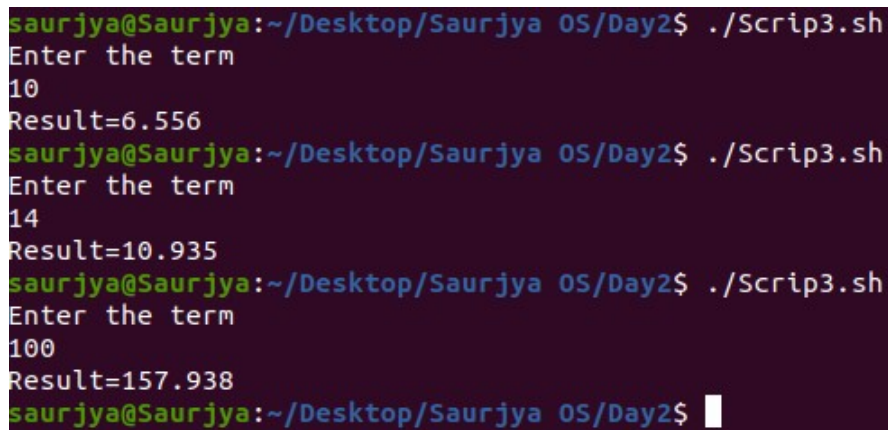
Output:

1.379

Code

```
echo "Enter the term"
read n
S=0.000
for (( i = 1 ; $i <= $n ; i = $i + 1))
do
    l=`echo "scale=3;l($i)/l(10)" | bc -l`
    S=`echo "scale=3;$S + $l" | bc -l`
done
echo "Result="$S
```

Output



```
saurjya@saurjya:~/Desktop/Saurjya OS/Day2$ ./Scrip3.sh
Enter the term
10
Result=6.556
saurjya@saurjya:~/Desktop/Saurjya OS/Day2$ ./Scrip3.sh
Enter the term
14
Result=10.935
saurjya@saurjya:~/Desktop/Saurjya OS/Day2$ ./Scrip3.sh
Enter the term
100
Result=157.938
saurjya@saurjya:~/Desktop/Saurjya OS/Day2$
```