

1. Write a shell script to accept two numbers and perform all arithmetic operations on it.

```
#!/bin/bash

echo "Enter the first number:"
read a

echo "Enter the second number:"
read b

sum=$((a + b))
diff=$((a - b))
prod=$((a * b))

if [ $b -ne 0 ]; then
    div=$((a / b))
    mod=$((a % b))
else
    div="undefined (division by zero)"
    mod="undefined (modulus by zero)"
fi

echo "Addition: $a + $b = $sum"
echo "Subtraction: $a - $b = $diff"
echo "Multiplication: $a * $b = $prod"
echo "Division: $a / $b = $div"
echo "Modulus: $a % $b = $mod"
```

2. Write a shell script to find largest of three numbers using conditional execution operators

```
#!/bin/bash
```

```
echo "Enter first number:"
```

```
read a
```

```
echo "Enter second number:"
```

```
read b
```

```
echo "Enter third number:"
```

```
read c
```

```
[ $a -ge $b ] && [ $a -ge $c ] && echo "$a is the largest" || \
```

```
([ $b -ge $a ] && [ $b -ge $c ] && echo "$b is the largest") || \
```

```
echo "$c is the largest"
```

3. Write a shell script to accept the name of the file from standard input and perform the following

tests on it

a) File executable

b) File readable

c) File writable

d) Both readable & writable

```
echo "Enter the file name:"
```

```
read filename
```

```
if [ ! -e "$filename" ]; then
```

```
    echo "File does not exist."
```

```
    exit 1
```

```
fi
```

```
if [ -x "$filename" ]; then
```

```
    echo "File is executable"
```

```
else
    echo "File is not executable"
fi
```

```
if [ -r "$filename" ]; then
    echo "File is readable"
else
    echo "File is not readable"
fi
```

```
if [ -w "$filename" ]; then
    echo "File is writable"
else
    echo "File is not writable"
fi
```

```
if [ -r "$filename" ] && [ -w "$filename" ]; then
    echo "File is both readable and writable"
else
    echo "File is not both readable and writable"
fi
```

4. Write a shell script which will display the username and terminal name who is login recently in to the Unix system.

```
u="santhu"
echo "user name $u"
read -p "hello"
```

5. Write a shell script to find number of files in a directory

```

dir="${1:-.}"
if [ -d "$dir" ]; then
    file_count=$(find "$dir" -maxdepth 1 -type f | wc -l)
    echo "Number of files in directory '$dir': $file_count"
else
    echo "Directory '$dir' does not exist."
fi
read -p "done"

```

6. Write a shell script to print the following format

```

1
12
123
1234
.....

```

```
#!/bin/bash
```

```

rows=5
for ((i=0; i<=rows; i++))
do
    for((j=1;j<=i;j++))
    do
        echo -n "$j "
    done
    echo " "
done

```

7. Write a shell script which will display the number of days in the given month and year

```

echo "Enter the year:"
read year
echo "Enter the month:"
read month
if [[ "$month" -lt 1 || "$month" -gt 12]]
then
    echo "Invalid month"
    exit 1
fi
days=$(date -d "$year-$month-01 +1 month -1 day" +%d)
echo "Number of days in month $month of year $year is: $days"
read -p"done"

```

8. Write a shell script to check whether a given number is perfect number or not

```

echo "enter number"
read n
sum=0
{
for((i=1;i<n;i++))
do
if((n%i==0));then
sum=$((sum+i))
fi
done
if((sum==n));then
echo" $n is a perfect number"
else
echo" $n is not a perfect number"
fi
}

```

9. Write a shell script for concatenation of two strings using arguments

```
str1="Hello"
str2="World"
str3="$str1 $str2"
echo "this is full string: $str3"
```

```
read -p"hello:"user_input
echo "$user_input"
~
```

10. Write a shell script to demonstrate break and continue statements

```
echo "Enter a number greater than 6"
read b
```

```
for ((i = 0; i < b; i++))
do
    if (( i == 6 )); then
        break
    fi
    echo "$i"
done
```

```
read -p "Hello: " user_input
```

```
echo "Enter a number greater than 6"
read n
```

```
for ((i = 0; i < n; i++))
```

```

do
    if (( i == 6 )); then
        continue
    fi
    echo "$i"
done

read -p "Hello: " user_input

```

11. Write a shell script to satisfy the following menu options

- a. Display current directory path
- b. Display today's
- c. Display users who are connected to the Unix system
- d. Quit

```

display_menu() {
    echo -e "\nMenu:"
    echo -e "a. Display current directory path"
    echo -e "b. Display today's date"
    echo -e "c. Display users who are connected"
    echo -e "d. Quit"
}

while true
do
    display_menu
    read -p "Enter your choice: " choice
    case "$choice" in
        a)
            echo "Current directory path: $(pwd)"
            ;;
        b)

```

```

    echo "Today's date: $(date)"
;;
c)
    echo "Connected users:"
    who
;;
d)
    echo "Exiting..."
    exit 0
;;
*)
    echo "Invalid choice. Please try again."
;;
esac
done

```

12. Write a shell script to delete all files whose size is zero bytes from current directory

```

echo -n "Enter name of the directory : "
read directory_name
if [ -d "$directory_name" ];
then
    echo "Directory exist"
    for i in `find $directory_name -size 0`
    do
        rm $i
        echo "Zero-sized files are Successfully deleted"
    done
else
    echo "Directory does not exist"

```



```
fi
```

```
read -p "done"
```

13. Write a shell script to display reverse numbers from given argument list

```
for ((i=$#; i>0; i--))
```

```
do
```

```
    echo "${i}"
```

```
done
```

```
read -p "hello"
```

14. Write a shell script to display factorial value from given argument list

```
factorial() {
```

```
    num=$1
```

```
    fact=1
```

```
    for ((i=1; i<=num; i++)); do
```

```
        fact=$((fact * i))
```

```
    done
```

```
    echo "Factorial of $num is: $fact"
```

```
}
```

```
for arg in "$@"; do
```

```
    factorial "$arg"
```

```
done
```

15. Write a shell script which will greet you “Good Morning”, “Good Afternoon”, “Good Evening” and “Good Night” according to current time

```
hour=`date +%H`
```

```
if [ $hour -le 12]
then
echo "GOOD MORNING WORLD"
elif [ $hour -le 16 ]
then
echo "GOOD AFTERNOON WORLD"
elif [ $hour -le 20 ]
then
echo "GOOD EVENING WORLD"
else
echo "GOOD NIGHT WORLD"
fi
read -p "hello"
```