Shell

1. Simple calci

```
#!/bin/bash

echo "Simple Calculator"
echo "Enter first number:"
read num1
echo "Enter second number:"
read num2
echo "Enter operator (+, -, *, /):"
read operator

case $operator in
   "+")
      result=$(echo "$num1 + $num2" | bc)
      ;;
   "-")
      result=$(echo "$num1 - $num2" | bc)
      ;;
   "*")
      result=$(echo "$num1 * $num2" | bc)
      ;;
   "/")
      if [ $num2 -eq 0 ]; then
         echo "Error: Division by zero!"
         exit 1
      else
         result=$(echo "scale=2; $num1 / $num2" | bc)
      fi
      ;;
   *)
      echo "Error: Invalid operator"
      exit 1
      ;;
esac

echo "Result: $result"
```

2.create an array of days

```
#!/bin/bash

# Create an associative array with keys 1 to 7 and values Monday to Sunday
declare -A days=(
   [1]="Monday"
   [2]="Tuesday"
   [3]="Wednesday"
   [4]="Thursday"
```

```
    [5]="Friday"
    [6]="Saturday"
    [7]="Sunday"
)

# Prompt the user to enter a number corresponding to a day of the week
echo "Enter a number (1-7) to get the corresponding day of the week:"
read number

# Check if the entered number is within the valid range
if (( $number >= 1 && $number <= 7 )); then
    # Retrieve the day corresponding to the entered number from the array
    day=${days[$number]}
    echo "The day corresponding to $number is $day."
else
    echo "Invalid input. Please enter a number between 1 and 7."
fi
```

3.compound interset

```
#!/bin/bash

echo "Compound Interest Calculator"
echo "Enter principal amount:"
read principal
echo "Enter annual interest rate (in decimal):"
read rate
echo "Enter number of years:"
read years
echo "Enter number of times interest is compounded per year:"
read comp_per_year

# Calculate compound interest
interest=$(echo "scale=2; $principal * (1 + ($rate / $comp_per_year)) ^
($comp_per_year * $years)" | bc)

echo "Compound interest after $years years: $interest"
```

4. Even nos btw 1 to 100

```
#!/bin/bash

echo "Even numbers between 1 and 100:"
# Loop through numbers from 1 to 100
for (( i = 1; i <= 100; i++ )); do
    # Check if the number is even
    if (( $i % 2 == 0 )); then
        echo $i
    fi
done
```

5. TSA of a cylinder

```
#!/bin/bash

echo "Total Surface Area (TSA) of a Cylinder Calculator"
echo "Enter the radius of the cylinder:"
read radius
echo "Enter the height of the cylinder:"
read height

# Calculate total surface area
pi=$(echo "scale=10; 4*a(1)" | bc -l)
TSA=$(echo "scale=2; 2 * $pi * $radius * ($radius + $height)" | bc)

echo "Total Surface Area of the cylinder: $TSA"
```

6.prime nos

```
#!/bin/bash

echo "Prime numbers between 1 and 100:"

# Loop through numbers from 1 to 100
for (( num = 2; num <= 100; num++ )); do
    prime=true
    # Check if the number is prime
    for (( i = 2; i <= num / 2; i++ )); do
        if (( num % i == 0 )); then
            prime=false
            break
        fi
    done
    if [ $prime == true ]; then
        echo $num
    fi
done
```

7.area of triangle

```
#!/bin/bash

echo "Area of Triangle Calculator"
echo "Enter the base of the triangle:"
read base
echo "Enter the height of the triangle:"
read height

# Calculate the area of the triangle
area=$(echo "scale=2; 0.5 * $base * $height" | bc)

echo "Area of the triangle: $area"
```

8.find all .sh files whose name starts with f

```
#!/bin/bash

# Find all .sh files whose names start with 'f' in the current directory and its subdirectories
find . -type f -name 'f*.sh'
```