PROGRAM
echo "Read two numbers"
read a
read b
echo "Value of a: $a"
echo "Value of b: $b"
add=$((a + b))
sub=$((a - b))
div=$((a / b))
mul=$((a * b))
echo "Addition of $a and $b = $add"
echo "Subtraction of $a and $b = $sub"
echo "Division of $a and $b = $div"
echo "Multiplication of $a and $b = $mul"

OUTPUT
Read two numbers
10
5
Value of a: 10
Value of b: 5
Addition of 10 and 5 = 15
Subtraction of 10 and 5 = 5
Division of 10 and 5 = 2
Multiplication of 10 and 5 = 50

PROGRAM

```
Read -p  "Enter a number:" number
if (( number % 2 == 0 )) then
    echo "The number $number is even."
else
    echo "The number $number is odd."
Fi
```

OUTPUT

```
Enter a number:
7
The number 7 is odd.
Enter a number:
8
The number 8 is even.
```

PROGRAM

```
echo "Enter three numbers:"
read num1
read num2
read num3
if (( num1 >= num2 )) then
    if (( num1 >= num3 )) then
        echo "The greatest number is: $num1"
    else
        echo "The greatest number is: $num3"
    fi
else
    if (( num2 >= num3 )) then
        echo "The greatest number is: $num2"
    else
        echo "The greatest number is: $num3"
    fi
fi
```

OUTPUT

```
Enter three numbers:
10
20
15
The greatest number is: 20
```

PROGRAM

```
echo "Enter a single digit (0-9):"
read digit
if (($digit == 0 )) then
    echo "Zero"
elif (( $digit ==1 )) then
    echo "One"
elif (( $digit ==2 )) then
    echo "Two"
elif (( $digit ==3 )) then
    echo "Three"
elif (( $digit ==4 )) then
    echo "Four"
elif (($digit ==5 )) then
    echo "Five"
elif (($digit==6 )) then
    echo "Six"
elif (($digit==7)) then
    echo "Seven"
elif (($digit ==8 )) then
    echo "Eight"
elif (( $digit ==9 )) then
    echo "Nine"
else
    echo "Invalid input! Please enter a single digit (0-9)."
fi
```

OUTPUT

```
Enter a single digit (0-9):
3
Three
Enter a single digit (0-9):
5
five
```

PROGRAM

```
PS3='Select option [1-5]: '
select d in Cir Sq Rec Tri Quit; do
  case $d in
    Cir)
      echo "Enter radius"
      read r
      echo "Value of r: $r"
      echo "Area: $(echo "3.14 * $r * $r" | bc)"
      ;;
    Sq)
      echo "Enter side"
      read a
      echo "Value of a: $a"
      echo "Area: $(echo "$a * $a" | bc)"
      ;;
    Rec)
      echo "Enter length"
      read l
      echo "Enter breadth"
      read b
      echo "Value of l: $l"
      echo "Value of b: $b"
      echo "Area: $(echo "$l * $b" | bc)"
      ;;
    Tri)
      echo "Enter base"
      read x
      echo "Enter height"
      read y
      echo "Value of x: $x"
      echo "Value of y: $y"
      echo "Area: $(echo "0.5 * $x * $y" | bc)";;
    Quit)
      exit ;;
  esac
done
```

OUTPUT

Select option [1-5]:
1) Cir
2) Sq
3) Rec
4) Tri
5) Quit
#? 1
Enter radius
5
Value of r: 5
Area: 78.50

Select option [1-5]:
1) Cir
2) Sq
3) Rec
4) Tri
5) Quit
#? 2
Enter side
4
Value of a: 4
Area: 16

Select option [1-5]:
1) Cir
2) Sq
3) Rec
4) Tri
5) Quit
#? 3
Enter length
6
Enter breadth

3
Value of l: 6
Value of b: 3
Area: 18

Select option [1-5]:
1) Cir
2) Sq
3) Rec
4) Tri
5) Quit
#? 4
Enter base
8
Enter height
5
Value of x: 8
Value of y: 5
Area: 20.00

Select option [1-5]:
1) Cir
2) Sq
3) Rec
4) Tri
5) Quit
#? 5

PROGRAM

```
Read -p "Enter a number to print its multiplication table:" number
echo "Multiplication Table of $number:"
for (( i=1; i<=10; i++ )); do
    result=$(( number * i ))
    echo "$number x $i = $result"
done
```

OUTPUT

```
Enter a number to print its multiplication table:
5
Multiplication Table of 5:
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50
```

PROGRAM

```
echo "Enter a number to check if it is a palindrome:"
read number
original_number=$number
reversed_number=0
while (( number > 0 )); do
    remainder=$(( number % 10 ))
    reversed_number=$(( reversed_number * 10 + remainder ))
    number=$(( number / 10 ))
done
if (( original_number == reversed_number )); then
    echo "$original_number is a palindrome."
else
    echo "$original_number is not a palindrome."
Fi
```

OUTPUT

```
Enter a number to check if it is a palindrome:
121
121 is a palindrome.
Enter a number to check if it is a palindrome:
123
123 is not a palindrome.
```

PROGRAM

```
echo "Enter a number to find the sum of its digits:"
read number
sum=0
until (( number == 0 )); do
    remainder=$(( number % 10 ))  # Get the last digit
    sum=$(( sum + remainder ))    # Add the last digit to sum
    number=$(( number / 10 ))     # Remove the last digit from the number
done
echo "The sum of the digits is: $sum"
```

OUTPUT

```
Enter a number to find the sum of its digits:
12345
The sum of the digits is: 15
```