2A)

Program:

```
echo "Welcome to the Basic Calculator"

echo " _____"

echo "Enter  first  number:"

read num1 echo "Enter second

number:"   read   num2   echo

"Choose operation:" echo "1.

Addition   (+)"   echo   "2.

Subtraction  (-)"  echo  "3.

Multiplication (*)" echo "4.

Division  (/)"  read  choice

case $choice in

  1)
result=$((num1 + num2))
echo "Result: $num1 + $num2 = $result"

    ;;

  2)
    result=$((num1 - num2))
echo "Result: $num1 - $num2 = $result"

    ;;

  3)
```

```
    result=$((num1 * num2))
 echo "Result: $num1 * $num2 = $result"


    ;;

  4)

    if [ $num2 -eq 0 ]; then
 echo "Error: Division by zero is not allowed." else

    result=$(echo "scale=2; $num1 / $num2" | bc) echo

    "Result: $num1 / $num2 = $result"

    fi

    ;;

  *)
 echo "Invalid choice. Please select from 1 to 4."
```

Input:

```
$ ./calculator.sh
Welcome to the Basic Calculator

Enter first number:
44
Enter second number:
77
Choose operation:
1. Addition (+)
2. Subtraction (-)
3. Multiplication (*)
4. Division (/)
1
```

Output:

```
Result: 44 + 77 = 121
```

2B)

Program:

```
echo -n "Enter a year: "

read year
```

```
if [ $((year % 4)) -eq 0 ] && [ $((year % 100)) -ne 0 ]
|| [ $((year % 400)) -eq 0 ]; then

    echo "$year is a leap year."

else

    echo "$year is not a leap year."

Fi
```

Input:

Enter a year: 2006

OUTPUT:

2006 is not a leap year.