Q: Write a program that takes a input and determines if the number is a prime.

Answer:

```
#!/bin/bash
echo -e "Enter the Number"
read n
for((i=2; i<=$n/2; i++))
do
  ans=$(( n%i ))
  if [ $ans -eq 0 ]
  then
    echo "it is not a prime number."
  fi
done
echo "$n is a prime number."
```

Q: Extend the program to take a range of number as input and output the Prime Numbers in that range.

Answer:

```
#!/bin/bash
echo "Enter the upper limit"
read limit
echo "prime numbers upto $limit are :"
echo "1"
i=2
while [ $i -le $limit ]
do
flag=1
j=2
while [ $j -lt $i ]
do
rem=$(( $i % $j ))
if [ $rem -eq 0 ]
then
flag=0
break
fi
j=$(( $j+1 ))
done
if [ $flag -eq 1 ]
then
echo "$i"
fi
i=$(( $i+1 ))
done
```

Q: Write a program that computes a factorial of a number taken as input.

Answer:

```
echo "Enter a number"
read num
fact=1
while [ $num -gt 1 ]
do
  fact=$((fact * num))
  num=$((num - 1))
done
echo $fact
```