Some examples in SHELL

Number of parameters(1)

```
#need exactly 3 parameters


if test $# -ne 3
then
  echo wrong number of parameters
  exit 1
fi
```

Number of parameters(2)

```
#need at least 3 parameters

if test $# -lt 3
then
  echo wrong number of parameters
  exit 1
fi
```

Number of parameters(3)

```
#need exactly 3 parameters
case $# in
3)
;;
*) echo wrong number of parameters
   exit 1
;;
esac
```

Number of parameters(4)

```
#need at least 3 parameters
case $# in
  0|1|2) echo wrong number of parameters
         exit 1
  ;;
  *)
  ;;
esac
```

Absolute name (directory/file)

```
case $1 in
  /*)
  ;;
  *) echo $1 is not absolute
     exit 2
  ;;
esac
```

Relative name (directory/file)

```
case $1 in
  */*) echo $1 is not relative
       exit 2
  ;;
  *)
  ;;
esac
```

Number(1)

```
case $1 in
   *[!0-9]*)
        echo the parameter is not a number
        exit 4
   *)
   ;;
esac
```

Number(2)

```
test $1 -gt 0 1>/dev/null 2>/dev/null

case $? in
    0)
    ;;
    *) echo $1 is not a number or not
                strictly greater than 0
       exit 4
    ;;
esac
```

Directory (1)

```
if test ! -d $1 -o ! -x $1
then
     echo $1 is not directory or is not
                executable
     exit 1
fi
```

Directory (2)

```
if test -d $1 -a -x $1
then
    echo $1 is a directory and executable
fi
```

File (1)

```
if test ! -f $1 -o ! -r $1
then
     echo $1 is not a file or it is not
                readable
     exit 1
fi
```

File (2)

```
if test -f $1 -a -r $1
then
     echo $1 is a file and it is readable
fi
```

Explore directory(1)

```
for i in *
do
     echo $i
done
```

Explore directory(2)

```
for i in *
do
     if -d $i -a -x $i
     then
          echo $i is a directory
     fi

     if -f $i -a -r $i
     then
          echo $i is a file
     fi
done
```

Word Count

```
echo "Num. characters=" `wc -c < $i`

echo "Num. words=" `wc -w < $i`

echo "Num. lines=" `wc -l < $i`
```

Variables

```
# Integer
counter=0

# Decimal
counter=0.0

# String
surface=“”
```

Expression

```
counter   = `expr $counter + 1`

surface   = `expr $x * $y`

mod       = `expr $counter % 2`
```

Operations

```
# Count the number of words
# of $i file
num=`wc -w < $i`

# Concatenate the value of $i
# to $list
list="$list $i"
```