1. Arithmetic scripting

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch arithmetic1.sh
root@348b1b94d28058d:~/linux_commands# chmod +x arithmetic1.sh
root@348b1b94d28058d:~/linux_commands# vi arithmetic1.sh
```

Step 2:

Write script in the file.

```bash
#!/bin/bash
x=8
y=2
echo "x=8, y=2"
echo "Addition of x & y"
echo $(( $x + $y ))
echo "Subtraction of x & y"
echo $(( $x - $y ))
echo "Multiplication of x & y"
echo $(( $x * $y ))
echo "Division of x & y"
echo $(( $x / $y ))
echo "Exponentiation of x & y"
echo $(( $x ** $y ))
echo "Modular division of x & y"
echo $(( $x % $y ))
echo "Incrementing x by 5, then x="
(( x+=5 ))
echo $x
echo "Decrementing x by 5, then x="
(( x-=5 ))
echo $x
echo "Multiplying x by 5, then x="
(( x*=5 ))
echo $x
echo "Dividing x by 5, then x="
(( x/=5 ))
echo $x
echo "Remainder of dividing x by 5, then x="
(( x%=5 ))
echo $x
~
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./arithmetic1.sh
x=8, y=2
Addition of x & y
10
Subtraction of x & y
6
Multiplication of x & y
16
Division of x & y
4
Exponentiation of x & y
64
Modular division of x & y
0
Incrementing x by 5, then x=
13
Decrementing x by 5, then x=
8
Multiplying x by 5, then x=
40
Dividing x by 5, then x=
8
Remainder of dividing x by 5, then x=
3
root@348b1b94d28058d:~/linux_commands#
```

2. Arithmetic scripting

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch arithmetic2.sh
root@348b1b94d28058d:~/linux_commands# vi arithmetic2.sh
root@348b1b94d28058d:~/linux_commands# chmod +x arithmetic2.sh
```

Step 2:

Write script in the file.

```bash
#!/bin/bash
x=10
y=6
echo "Addition"
let "z=$(( x+y ))"
echo "z=$z"
echo "Subtraction"
let "z=$(( x-y ))"
echo "z=$z"
echo "Multiplication"
let "z=$(( x*y ))"
echo "z=$z"
echo "Division"
let "z=$(( x/y ))"
echo "z=$z"
echo "Modular division"
let "z=$(( x%y ))"
echo "z=$z"
let "x+=5"
echo "Incrementing x by 5, then x="
echo $x
let "x-=5"
echo "Decrementing x by 5, then x="
echo $x
let "x*=5"
echo "Multiply x by 5, then x="
echo $x
let "x/=5"
echo "Dividing x by 5, then x="
echo $x
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./arithmetic2.sh
Addition
z=16
Subtraction
z=4
Multiplication
z=60
Division
z=1
Modular division
z=4
Incrementing x by 5, then x=
15
Decrementing x by 5, then x=
10
Multiply x by 5, then x=
50
Dividing x by 5, then x=
10
root@348b1b94d28058d:~/linux_commands#
```

3. Arithmetic scripting

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch arithmetic3.sh
root@348b1b94d28058d:~/linux_commands# vi ar
arithmetic1.sh  arithmetic2.sh  arithmetic3.sh  array_sum.sh
root@348b1b94d28058d:~/linux_commands# vi arithmetic3.sh
root@348b1b94d28058d:~/linux_commands# chmod +x arithmetic3.sh
```

Step 2:

Write script in the file.

```
#!/bin/bash
echo "a=10, b=3"
echo "c is the value of addition c=a+b"
a=10
b=3
echo "c= `expr $a + $b`"
~
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./arithmetic3.sh
a=10, b=3
c is the value of addition c=a+b
c= 13
```

4. If condition

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch if1.sh
root@348b1b94d28058d:~/linux_commands# vi if1.sh
root@348b1b94d28058d:~/linux_commands# chmod +x if1.sh
```

Step 2:

Write script in the file.

```
#!/bin/bash
read -p "Enter number: " number
if [ $number -gt 125 ]
then
        echo "Value is greater than 125"
fi
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./if1.sh
Enter number: 571
Value is greater than 125
root@348b1b94d28058d:~/linux_commands#
```

5. If condition

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch if1.sh
root@348b1b94d28058d:~/linux_commands# vi if2.sh
root@348b1b94d28058d:~/linux_commands# chmod +x if2.sh
```

Step 2:

Write script in the file.

```
#!/bin/bash
if [ "myfile" == "myfile" ];
then
        echo "true condition"
fi
if [ "myfile" == "yourfile" ];
then
        echo "false condition"
fi
~
~
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./if2.sh
true condition
root@348b1b94d28058d:~/linux_commands#
```

6. If condition

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch if3.sh
root@348b1b94d28058d:~/linux_commands# vi if3.sh
root@348b1b94d28058d:~/linux_commands# chmod +x if3.sh
```

Step 2:

Write script in the file.

```bash
#!/bin/bash
if [ 10 -gt 3 ];
then
        echo "10 is greater than 3"
fi
if [ 3 -gt 10 ];
then
        echo "3 is not greater than 10"
fi
if [ 3 -lt 10 ];
then
         echo "3 is lesserr than 10"
fi
if [ 10 -lt 3 ];
then
        echo "10 is not lesser than 3"
fi
if [ 10 -eq 10 ];
then
        echo "10 is equal to 10"
fi
if [ 10 -eq 9 ];
then
        echo "10 is not equal to 10"
fi
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./if3.sh
10 is greater than 3
3 is lesserr than 10
10 is equal to 10
root@348b1b94d28058d:~/linux_commands#
```

7. If condition

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch if4.sh
root@348b1b94d28058d:~/linux_commands# vi if4.sh
root@348b1b94d28058d:~/linux_commands# chmod +x if4.sh
```

Step 2:

Write script in the file.

```
#!/bin/bash
if [ 8 -gt 6 ] && [ 10 -eq 10 ];
then
        echo "Conditions are true"
fi
if [ "mylife" == "myfile" ] && [ 3 -gt 10];
then
        echo "Conditions are false"
fi
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# chmod +x if4.sh
root@348b1b94d28058d:~/linux_commands# ./if4.sh
Conditions are true
root@348b1b94d28058d:~/linux_commands#
```

8. If condition

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# vi if5.sh
root@348b1b94d28058d:~/linux_commands# chmod +x if5.sh
```

Step 2:

Write script in the file.

```
#!/bin/bash
if [ 8 -gt 7 ] || [ 10 -eq 3 ];
then
        echo "Condition is true"
fi
if [ "mylife" == "yourlife" ] ||[ 3 -gt 10 ];
then echo "Condition is false"
fi
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./if5.sh
Condition is true
root@348b1b94d28058d:~/linux_commands#
```

9. If condition

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch if6.sh
root@348b1b94d28058d:~/linux_commands# vi if6.sh
root@348b1b94d28058d:~/linux_commands# chmod +x if6.sh
```

Step 2:

Write script in the file.

```bash
#!/bin/bash
if [[ 10 -eq 10 && 5 -gt 4 || 3 -eq 4 || 3 -lt 6 ]];
then
        echo "Condtion is true"
fi
if [[ 8 -eq 8 && 8 -gt 10 || 9 -lt 5 ]];
then
        echo "Condition is false"
fi
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./if6.sh
Condtion is true
root@348b1b94d28058d:~/linux_commands#
```

10.   If condition

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch if7.sh
root@348b1b94d28058d:~/linux_commands# vi touch7.sh
root@348b1b94d28058d:~/linux_commands# chmod +x if7.sh
```

Step 2:

Write script in the file.

```
#!/bin/bash
if [ $1 -gt 50 ]
then
        echo "Number is greater than 50"
        if (( $1 % 2 == 0 ))
        then
                echo "and it is an even number"
        fi
fi
~
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./if7.sh 70
Number is greater than 50
and it is an even number
```

11. Else if

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch else_if1.sh
root@348b1b94d28058d:~/linux_commands# vi else_if1.sh
root@348b1b94d28058d:~/linux_commands# chmod +x else_if1.sh
```

Step 2:

Write script in the file.

```
#!/bin/bash
if [ 10 -gt 3 ];
then
        echo "10 is greater than 3"
else
        echo "10 is not greater than 3"
fi
if [ 3 -gt 10 ];
then
        echo "3 is greater than 10"
else
        echo "3 is not greater then 10"
fi
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./else_if1.sh
10 is greater than 3
3 is not greater then 10
```

12.   Else if

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch else_if2.sh
root@348b1b94d28058d:~/linux_commands# vi else_if2.sh
root@348b1b94d28058d:~/linux_commands# chmod +x else_if2.sh
```

Step 2:

Write script in the file.

```
#!/bin/bash
if [[ 10 -gt 9 && 10 == 9 || 2 -lt 1 || 25 -gt 20 ]];
then
        echo "Given condition is true"
else
        echo "Given condition is false"
fi
if [[ 10 -gt 9 && 10 == 8 || 3 -gt 4 || 8 -gt 8 ]];
then
        echo "Given condition is true"
else
        echo "Given condition is not true"
fi
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./else_if2.sh
Given condition is true
Given condition is not true
```

13.   Else if

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch else_if3.sh
root@348b1b94d28058d:~/linux_commands# vi else_if3.sh
root@348b1b94d28058d:~/linux_commands# chmod +x else_if3.sh
```

Step 2:

Write script in the file.

```
#!/bin/bash
read -p "Enter a value:" value
if [ $value -gt 9 ];
then
        echo "The value you typed is greater than 9.";
else
        echo "The value you typed is not greater than 9";
fi
~
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./else_if3.sh
Enter a value:7
The value you typed is not greater than 9
root@348b1b94d28058d:~/linux_commands# ./else_if3.sh
Enter a value:12
The value you typed is greater than 9.
root@348b1b94d28058d:~/linux_commands#
```

14. Else if

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch else_if4.sh
root@348b1b94d28058d:~/linux_commands# vi else_if4.sh
root@348b1b94d28058d:~/linux_commands# chmod +x else_if4.sh
```

Step 2:

Write script in the file.

```
#!/bin/bash
read -p "Enter a value:" value
if [ $value -gt 9 ];
then
        if [ $value -lt 11 ];
        then
                echo "$value>9, $value<11"
        else
                echo "The value you typed is greater than 9"
        fi
else
        echo "The value you typed is not greater than 9."
fi
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./else_if4.sh
Enter a value:10
10>9, 10<11
root@348b1b94d28058d:~/linux_commands#
```

15. Else if

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch else_if5.sh
root@348b1b94d28058d:~/linux_commands# vi else_if5.sh
root@348b1b94d28058d:~/linux_commands# chmod +x else_if5.sh
```

Step 2:

Write script in the file.

```
#!/bin/bash
read -p "Enter a number of quantity:" num
if [ $num -gt 100 ];
then
        echo "Eligible for 10% discount"
elif [ $num -lt 100 ];
then
        echo "Eligible for 5% discount"
else
        echo "Lucky draw winner"
        echo "Eligible to get the item for free"
fi
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./else_if5.sh
Enter a number of quantity:150
Eligible for 10% discount
root@348b1b94d28058d:~/linux_commands#
```

16. Else if

Step 1:

Create a shell script and open in vi editor

```
root@348b1b94d28058d:~/linux_commands# touch else_if6.sh
root@348b1b94d28058d:~/linux_commands# vi else_if6.sh
root@348b1b94d28058d:~/linux_commands# chmod +x else_if6.sh
```

Step 2:

Write script in the file.

```bash
#!/bin/bash
read -p "Enter the number of quantity:" num
if [ $num -gt 200 ];
then
        echo "Eligible for 20 % discount"
elif [[ $num == 200 || $num == 100 ]];
then
        echo "Lucky draw winner"
        echo "Eligible to get the item for free"
elif [[ $num -gt 100 && $num -lt 200 ]];
then
        echo "Eligible for 10% diiscount"
elif [ $num -lt 100 ];
then
        echo "No discount"
fi
```

Step 3:

Run the script and get the output.

```
root@348b1b94d28058d:~/linux_commands# ./else_if6.sh
Enter the number of quantity:100
Lucky draw winner
Eligible to get the item for free
root@348b1b94d28058d:~/linux_commands#
```