

Q1.

```
cp /etc/passwd ~/copy_of_passwd  
sudo chown :<group_name> ~/copy_of_passwd  
chmod g+rw ~/copy_of_passwd
```

Q2.

```
cut -d ':' -f <column_number> /etc/group | wc -w
```

Q3.

```
sudo lastb | head -1 | cut -d ' ' -f 1
```

Q4.

```
awk -F: '$3 >= 1000 && $3 != 65534 {print $1}' /etc/passwd | head -n 3
```

Q5.

```
echo "uname -m > OS.txt" | at now + 2 minutes
```

Q6.

```
#!/bin/bash
```

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

```
read number
```

```
# Validate input
```

```
if ! [[ $number =~ ^[0-9]+$ ]]; then
```

```
    echo "Invalid input! Please enter a valid number."
```

```
    exit 1
```

```
fi
```

```
# Print the pattern
```

```
for ((i = 1; i <= $number; i++)); do
```

```
    spaces=$((number - i))
```

```
    for ((j = 1; j <= spaces; j++)); do
```

```
        echo -n " "
```

```
done
for ((k = 1; k <= i; k++)); do
    echo -n ". "
done
echo ""
done
for ((i = $number; i >= 1; i--)); do
    spaces=$((number - i))
    for ((j = 1; j <= spaces; j++)); do
        echo -n " "
    done
    for ((k = 1; k <= i; k++)); do
        echo -n ". "
    done
    echo ""
done
```

Q7.

```
find /home/farzan_rahmani -name "*.txt" -size +0
```

Q8.

```
#!/bin/bash
```

```
echo -n "Enter an IP address: "
```

```
read ip_address
```

```
ping -c 4 $ip_address
```

Q9.

Q10.

```
#!/bin/bash
```

```
echo -n "Enter a three-digit number: "
```

```
read number
```

```
if [[ $number =~ ^[0-9]{3}$ ]]; then
```

```
    digit1=$(( $number / 100 ))
```

```
    digit2=$(( ($number / 10) % 10 ))
```

```
    digit3=$(( $number % 10 ))
```

```
    sum=$(( $digit1 + $digit2 + $digit3 ))
```

```
    echo "Sum of digits: $sum"
```

```
else
```

```
    echo "Invalid input! Please enter a three-digit number."
```

```
fi
```