**Question 1**

**public** **class** Armstrong {

**public** **static** **void** main(String[] args) {

**int** n=153;

**int** original=n;

**int** temp;

**int** result=0;

**while**(n!=0)

{

temp=n%10;

temp=temp\*temp\*temp;

result=result+temp;

n=n/10;

}

**if**(result==original)

System.***out***.println("It is a Armstrong number");

**else**

System.***out***.println("It is not a Armstrong number");

}

}

**Question 2**

**public** **class** AmstrongRange {

**public** **static** **void** main(String[] args) {

**int** i=100,arm,n,a;

System.***out***.println("The Armstrong numbers between 100 and 999");

**while**(i<1000)

{

n=i;

arm=0;

**while**(n>0)

{

a=n%10;

arm=arm+(a\*a\*a);

n=n/10;

}

**if**(arm==i)

System.***out***.println(i);

i++;

}

}

}

**Question 3**

**Simple interest**

**import** java.util.Scanner;

**public** **class** Simpleinterest {

**public** **static** **void** main(String[] args) {

Scanner sc=**new** Scanner(System.***in***);

System.***out***.println("Enter the Principal:");

**double** principal=sc.nextDouble();

System.***out***.println("Enter the Interest Rate:");

**double** rate=sc.nextDouble();

System.***out***.println("Enter the Time Duration:");

**double** time=sc.nextDouble();

System.***out***.println("The Simple Interest is:"+((principal\*rate\*time)/100));

}

}

**Compound interest**

**import** java.util.Scanner;

**public** **class** CompoundInterest {

**public** **static** **void** main(String[] args) {

Scanner sc=**new** Scanner(System.***in***);

System.***out***.println("Enter the Principal:");

**double** principal=sc.nextDouble();

System.***out***.println("Enter the Interest Rate:");

**double** rate=sc.nextDouble();

System.***out***.println("Enter the Time Duration:");

**double** time=sc.nextDouble();

System.***out***.println("Enter the number of times interest compounded:");

**double** number=sc.nextDouble();

**double** CI=principal\*(Math.*pow*((1+rate/100),(time\*number)))-principal;

System.***out***.println("The Coumpond Interest is:"+CI);

}

}

**Question 4**

**import** java.util.Scanner;

**public** **class** Marks {

**public** **static** **void** main(String[] args) {

Scanner sc=**new** Scanner(System.***in***);

System.***out***.println("Enter the marks of subject A");

**int** A=sc.nextInt();

System.***out***.println("Enter the marks of subject B");

**int** B=sc.nextInt();

System.***out***.println("Enter the marks of subject C");

**int** C=sc.nextInt();

**int** res=A+B+C;

**if**(A>60 && B>60 && C>60)

System.***out***.println("Passed");

**else** **if**((A>60 && B>60)||(A>60 && C>60)||(B>60 && C>60))

System.***out***.println("Promoted");

**else** **if**((A>60 || B>60 || C>60)||(res<60))

System.***out***.println("Failed");

**else**

System.***out***.println("Enter a valid number");

}

}

**Question 5**

**import** java.util.\*;

**public** **class** IncomeTax {

**public** **static** **void** main(String[] args) {

Scanner sc=**new** Scanner(System.***in***);

System.***out***.println("Enter your income");

**double** income=sc.nextDouble();

**if**(income>=0 && income<=180000)

System.***out***.println("Tax payable is 0");

**else** **if**(income>=181001 && income<=300000)

System.***out***.println("Tax payable is"+(income\*0.1));

**else** **if**(income>=300001 && income<=500000)

System.***out***.println("Tax payable is"+(income\*0.2));

**else** **if**(income>=500001 && income<=1000000)

System.***out***.println("Tax payable is"+(income\*0.3));

**else**

System.***out***.println("Enter amount less than 1000000");

}

}

**Question 7**

**import** java.util.Scanner;

**public** **class** ElementSearch {

**public** **static** **void** main(String[] args) {

**int** flag = 0,i;

Scanner sc=**new** Scanner(System.***in***);

System.***out***.println("Enter the number of elements in an array");

**int** n=sc.nextInt();

System.***out***.println("Enter the element");

**int** a[]=**new** **int**[n];

**for**(i=0;i<n;i++)

{

a[i]=sc.nextInt();

}

System.***out***.println("Enter the number to be searched");

**int** x=sc.nextInt();

**for**(i=0;i<n;i++)

{

**if**(a[i]==x)

{

flag=1;

**break**;

}

**else**

flag=0;

}

**if**(flag==1)

System.***out***.println("Element found");

**else**

System.***out***.println("Element not found");

}

}

**Question 8**

**import** java.util.Arrays;

**public** **class** BubbleSort {

**public** **static** **void** main(String[] args) {

**int** a[]= {5,12,14,6,78,19,1,23,26,35,37,7,52,86,47};

System.***out***.println("Elements before sorting:"+Arrays.*toString*(a));

**int** n=a.length;

**for**(**int** i=0;i<n-1;i++)

{

**for**(**int** j=0;j<n-1;j++)

{

**if**(a[j]>a[j+1])

{

**int** temp=a[j];

a[j]=a[j+1];

a[j+1]=temp;

}

}

}

System.***out***.println("Elements after sorting:"+Arrays.*toString*(a));

}

}

**Question 9**

**Subject class:**

**public** **class** Subject {

**int** A;

**int** B;

**int** C;

**public** Subject(**int** a, **int** b, **int** c) {

A = a;

B = b;

C = c;

}

**public** **void** sum() {

System.***out***.println(A+B+C);

}

**public** **void** avg() {

System.***out***.println((A+B+C)/3);

}

}

**Student class:**

**public** **class** Students **extends** Subject {

**public** Students(**int** a, **int** b, **int** c) {

**super**(a, b, c);

}

**public** **static** **void** sumavg(**int** x, **int** y,**int** z) {

**int** sum=x+y+z;

**int** avg=sum/3;

System.***out***.println("Sum:"+sum);

System.***out***.println("Average:"+avg);

}

**public** **static** **void** main(String[] args) {

Subject p=**new** Subject(50,60,70);

Subject q=**new** Subject(55,65,75);

Subject r=**new** Subject(90,40,60);

System.***out***.println("The sum and average of Student1:");

p.sum();

p.avg();

System.***out***.println("The sum and average of Student2:");

q.sum();

q.avg();

System.***out***.println("The sum and average of Student3:");

r.sum();

r.avg();

System.***out***.println();

System.***out***.println("Sum and Average of Subject A:");

*sumavg*(p.A,q.A,r.A);

System.***out***.println("Sum and Average of Subject B:");

*sumavg*(p.B,q.B,r.B);

System.***out***.println("Sum and Average of Subject A:");

*sumavg*(p.C,q.C,r.C);

}

}