```
Develop a Java program that pooling all real solutions to the
quodratic aquation an2+bn+c=0. Road Pra, b, c and
real solutions.
use the guadrotic jornula. If the des or windle 5-4ac 95
Purport gana. woll. *;
i remais. 19th. somes; troguis
class quodegn
 public static void maln(string :ss[]) {
    ploot a, b, c;
    glost x1, x2, D;
    Scanner XX = new Scanner (System. Pu);
    System.out. pobuttin ("Enter the value of a, b and c");
    a = xx.nextPut();
     b = XX. next Int ();
     c = xx. next Int ();
     D=((b*b)-(4*a*c));
      of (D = = 0)
        x1 = (-b/(2*a));
        System. out. pourtly 1" Rooks are real and egual "+ x2);
In The hooks of the equation are: "+ x1 +" and "+ x2);
      0180 % (D>0)
        X1 = ( float ) ((-b) + Math. sqpt (D)) / (2* 0);
        x2 = (jloot)((-b) - Modh. Sgort (0))/(2*0);
```

System. out. plendly 1' foots are real and destrut in The goods of the equation are: "+x1+" and "+x2); ouse System. out. parhaller ("There are not real solutions"); : v. 106 : Reman . Po . . with + (1 300 passon Instrum bion Stores To (of we sport Remove and live down of to will probably to Enton Horovalino of the : 1) INT trov. Yx tay, about or sent to talker by the mot Elmon Cappy March 11 (to 1) Car a 1 1 (11 they who . To I they)

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LAB 2
Develop or Java program to creale or class student with
member usu, name, on array wedlets and an orray mork
melude methods to another and display details and a method to
 calculate SUPA of a student.
in life. sug frequip
Puport gava. uffl. Scanner;
closs student
   Styling usn;
   String name,
   ent redils [];
    ; [] stran ty
    gut gpal7;
    ( v, 1 tup
     vold auept ()
       Scanner XX = new Scanner (System. ?n);
       System.out. parten 1" Ender the number of subjects");
       N= XX. next 2nt (); 116
       credats = venognot [N];
        marks = new Put [n];
        System. out. partly ("ENTER STUDENT DETAILE \n");
        System. ont. portor l'actor student USN");
        USN = XX. Next();
        System, out, partin (" Ender & tudent name");
       System. out, portin (" ruder student marks, "" 5 sulgeds
                        + n + " Subjects");
       por (120; 1< n; 9++)
```

```
System. out. politin l'Ender redite of subject"+ (9+1))
    (1) tut +xon, xx = [1] 29+9600
     System. and. part In 1" Furder marks of subject" + 19
     marks Eij = xx. vextand();
Nord are play ()
System. out. perully ("In STUDENT NAME = "+ name);
 System. out, possible 1" \n Usn = "+" Lusn = +" \n");
 System. ond, politin l'adlts yor subject "+ (9+41) + := "+
            Ged Pts E ? ] + " \t" +" mocks ? n subject" + (P+1)+"
                     +marks E?] = +" \ +" +" gpa="+ gpa=");
vod calesgral)
    Put total croats = 0;
   out total marks = 0;
    total credits = total credits + credits [9];
    Jag (9=0; PCN; P++)
        of emake [17 >=90] 4 marke [9] <=100
        of tworks?
        else of (malks ??) > = 8044 narles ??) < 90)
           apla (i)=q;
        else (mosks [:] >=7014 mesks [?] <
           gpa [1] = 8;
```

```
else g (morks [1] > = 6044 morks[7] < 70)
       9 pla [1] = 7;
     elie g (marks [i] = 5044 marks [i] < 60)

and (i] = 5;
       gp& (1) = 5;
     else { (misks (i) > = 4044 misks [?] < 50)
       gpali]=+;
       gpa?i] = 0;
   Jos (1=0; 1° < N; 9++)
      totalmarks = totalmarks + (sed of [i] * gpa?ij);
   Sgpadyloot) totalmarks./total Redits;
System.ond. poshtln("Inm shpA = "+ sgpa);
ulour clab
   public static void malu (String. [] organ
       Student 51 = now student (1;
       s1. auept();
       st. colingpa ();
       St. Desplay (1;
```

```
cu Command Prompt
C:\Users\Acer\Documents\JAVA>java main
Enter the number of subjects
4
ENTER STUDENT DETAILS
Enter student USN
18M19CS000
Enter student name
XYZ
Enter student marks in 4 subjects
Enter credits of subject 1
4
Enter marks of subject 1
95
Proceedings of Subject 2
Enter credits of Subject 2
Enter marks of Subject 2
90
Enter credits of Subject 3
5
Enter marks of subject 3
86
Enter credits of subject 4
3
Enter marks of subject 4
SGPA = 9.3125
USN = 1BM19CS000
credits for subject 1 = 4
credits for subject 2 = 4
credits for subject 3 = 5
credits for subject 4 = 3
                                                                                 marks in subject 1 = 95 gpa = 10
marks in subject 2 = 90 gpa = 10
marks in subject 3 = 86 gpa = 9
marks in subject 4 = 75 gpa = 8
C:\Users\Acer\Documents\JAVA>_
```

ø

```
Create a class Book which contains jour members! wo name, outhor
ECM2
  pola, rum-pages. Include a construidos to set the values por the mento;
   Include mothers to set and get the detalls of the objects. Include a
    to String() mothod that would diplay the complete detalls of the book.
    Dovolop à Jone program to acade in book objoils.
    Pupper Pava. utl. Scanner
    Lar Book
      · Strang name;
       Story author;
       Heat folice;
        , sapag-min by
        Scanner is = new swarmer (System. Pr);
           name =
             parce = 0.0%;
             nun-pages = 0;
         vold augst 1)
           System.out. pooled (" Enter the book NAME: ");
           system and posterior ander the AUTHOR of the book: ");
           System and postitul "Enter the PRICE of the book: "1;
           outhor =ss, wext();
           System. out. postin l'Enter the NUMBER OF PACIES an the book!
            vum:page = $5. vext Int(1;
           public string tostring ()
           redurn (name + "\tit" + andher + "\t\t Rs." + pole + "\t\t
                                                          num-pages);
```

```
public static word work (string [] args)
    Scanner 35 = now Scanner (System, R1);
System. out. polithe ("In Enter the number of books; ");
     Put n = SS. next Int ();
     Book b[] = new Book [M];
     for (Put = 0; P < n; 9++)
      System. out. poolity 1" IN ENTER THE DETAILS OF BOOK
      b[9] = New Book ();
       System. out. poolutin ("\n\n");
                                     DETAILS OF ALL BOOKS - ->\V');
    System. out. position ("In NAME LE LE AUTHOR LE LE PRICE
     for (9/4)=0; (< 1); (++)
       System. oud. partly (6297);
                            Children of Standard Lines of Alana
                        Authorite of Dir. " america francisco
```

C:\Users\Acer\Documents\JAVA>java Booksmain Enter the number of books : ENTER THE DETAILS OF BOOK 1 Enter the book NAME : EFTER THE BOOK NAME:

XXX

Enter the AUTHOR of the book:

XYZ

Enter the PRICE of the book:

500

Enter the NUMBER OF PAGES in the book:

120 ENTER THE DETAILS OF BOOK 2 Enter the book NAME : EFTER THE DOOK NAME : YYYY EFTER THE AUTHOR OF THE book : abc EFTER THE PRICE OF THE book : 800 EFTER THE NUMBER OF PAGES IN THE book : 300 <---->
DETAILS OF ALL BOOKS----> NUMBER OF PAGES NAME AUTHOR PRICE ххх ууу Rs.500.0 Rs.800.0 C:\Users\Acer\Documents\JAVA>_

C:\Users\Acer\Documents\JAVA>javac Lab3.java

B = 0

LABA Doubles a Java program to deale a closs bank that militaring and King of alcount for Pts westomers, one called southing amount and the other Euseen amount. The sauling amount partides compound ? werest and Withdrawal faill9 there but no cheque book jaid by. The western away provides cheque book jailly but us interest. Europent account hold elle formaldaly or whole munded and of the balance of below this love, a source charge 95 Purposed. Create a class Account that stores westomer none, amount number and type of amount. From this dorive the dasses was - and and Son-ant to make them more sperge to their requiremends. Turlind e the nevels ary in others hi order the to achieve the following · A crept deposit from wistomer and update the balance. · Dosplay the balance. · compide and deposit suberest · permet wethdrawal and update the balance · Check for the mannem balance, Emposo panalty of necessary and up date the balance Emport gava. w/1. *; jupert Java. up. Sianner; closer Alcusunt Scanner xx = new Scanner (System?in); String westomer-name, type-of-ouround; long swamt-rumber; double balonne = 5000; voldacept()} 2 system. out. poolitu l'hudes metomes name"); uistomer - name = xx. next(); Sy Stem. out. positive! " fuder Account number"); account number = x x. vextlony cs.

```
roug goborat ()
   System. out. politin l'Enter the amount to be deported.);
   dep = xx. next2nt();
   balance + = dep;
    Bystem. out position ("Balance =" + 6 alance);
 Used worthdrawall)
   System.out. poolin ("Enter the amount to be withdrawn");
  h put withdrate;
   withdra = xx. next 2nd (1;
   balance = withdra;
    System. out. politin ("Balance = "+ balance);
dals burket oxtends Auount
Vord penalty ()
  1 0, (balance 2 2000)
       System.out. prontin l' Penalty of 100 kg, 05 taken jos mantosn.
      System. out positive!" Bolance = "+ balance);
close Sound extends Account
  vold Publich ()
      ° 2 balance $ 0,02;
      = transcur") vilendaj tuo. mategis
      System. out. perhatin ("Total Belanne ="+balanne),
```

Shord seals public static void mal (String page 2) Scanner XX = new granner (System 9 1); Cuert Act c = new luse Ad (); SanAct s = new SanAct (1; system. out. poortly 1º knder your choice \n1. souring amount pos (;;) out chosce = xxnext Ent(); 1 = Dunalos Tartalanto 9) (chopce = = 1) System.out. populationales your charce \n1. Deposite \n2, withdown; ent n = xx, vextent(); Cmoth (n) cose1: g. deposit (1; whe 2: . S. withdrawel (); default: System, out, postille l'entered waring optioni); WHIT IN THE WOLD TO HILL RAMAROST C) of (whorce = = 2) Gystemond. portola l'anton your Worke Int. Deporte \12. Put in = xx. next Ent();

week. 2. wothdeamal (); default: System. out. porter l'autored waring option"); Sport state first of the state of the first state it if a at a separation of the part of the part of it Squal discourse of process & and the second of the second o

est command komptogas base 1900 Balance=4000.0 Enter your choice 1.Saving account 2.current account Inter your choice
1. Saving account
2. current account
1
Inter customer name
XYZ
Enter Account number
123
Enter your choice
1. Deposite
2. Withdraw
1
Enter the amount to be deposited
1000
Balance-7120.0
Intrest-142.4
Total Balance-7262.4
Enter your choice
1. Saving account
2. current account
2
Enter customer name
abc
Enter Account number
456
Enter Account number
456
Enter Account number
456
Enter he amount to be withdrawn
3000
Balance-500.0
Penalty of 100 Rs is taken for maintaining less balance
Balance-400.0
Enter your choice
1. Saving account
2. current account 2.current account

1
Enter customer name
par
Enter Account number
789
Enter your choice
1. Deposite

11

Enter customer name
xyz
Enter Account number
123
Enter your choice
1. Deposite
2. Withdraw
1
Enter the amount to be deposited
1000
Balance-7120.0
Intrest-142.4
Total Balance-7262.4
Enter your choice
1. Saving account
2. current account 2.current account
2
Enter customer name abc
Enter Account number
456
Enter your choice
1. Deposite
2.Withdrawl
2
Enter the amount to be withdrawn
3500
Balance=500.0
Penalty of 100 Rs is taken for maintaining less balance
Balance=400.0
Enter your choice
1.Saving account
2.current account 2.current account
1
Enter customer name
par
Enter Account number
789
Enter your choice
1. Deposite
2. Withdraw
2
Enter the amount to be withdrawn
1600
Balance=6262.4
Enter your choice

11

```
Devolop a Java program to reade an abstract close named shape that
LAB S
 combons has Indepose and an empty method named part Areal).
 Provide three classes named Rentangle, Prangle and Itale such that
  carl one of the day axtends the day shope. Each one of the darker
  controlnenty the method pollothere () that points the dea of the
  Puport gava. UPI. Scanner:
   abstract class shape
      abstract vold politheal);
      Double a,b;
   closs Restangle extends Shape
       pouble n, y;
       Redanglie (Double a, Double b)
        En=&; 4=b;3
       () see there bev
         System. out, poortly ("Avera of the Rectangle =" + (n *y));
   charle Prangle extends shope
    Double 2,4
    Tryangle (Double a, Double b)
     Ln=a; y=b; 5
     () seek tuly brev
       Eystem. out. proutint "Avera of the Trangle = "+ 10.5 xxxxy"
```

```
das Baile extends Shope
    pouble 9;
    chile (Double a)
    [ n= w; ]
    (Jase Adred Sov
      System.out, poontly ("Aver of the Carole = "+ (3.14 + 9.49.1);
    Public static vold maln [strings[] angs]
does abstract area &
       Scanner XX = new Scanner (5ystem?n);
       System. out, partin 1" Ruder langth and whath of
        w = xx. next Double ();
         x = xx. next Double ();
        leitangle E = new fertangle (w, x);
        System. oud. poolul" Enter hoght and bose of trangle"):
         y = xx. next Double 17;
         2 = XX. Next Double ();
        Wangle t= new Wangle (y, z);
        System. out, possition 1 ander the God Pus of Poule"?;
        p=xx.next double ();
        Barle L= vous Carle (p);
        C. psPrd Agen ();
```

⊠ John andkompt C:\Users\Acer\Documents\JAVA≻javac Lab5.java C:\Users\Acer\Documents\JAVA>java abstractarea Enter length and width of rectangle 6 Area of the Rectangle = 30.0 Enter height and base of triangle 3 Area of the Triangle = 3.0 Enter the radius of circle Area of the Circle = 153.86 C:\Users\Acer\Documents\JAVA>

 $\Box 1$