\*) Divilop a JAVA program that prints all real colutions to the quadratic equation art+bx+c=0. Kead in a, b, c and use the quadratic formula. If the discriminate b2-40c is regative, display a message stating that there are no real solutions.

-> Algorithm:

1) START It wind " antweet the TRATE (1

2) Read a, b, c ( to efficients of the quadratic equation)

3) Calculate d = b2-400

4) 4 (d==0) (1) dualities 20 - d

 $\rightarrow$  Colculate r(root) = (-b)

-> Calculate 82(Noot2) = (b)

-> Display real and equal roots (21, 22)

5) else if (d 70)

→ Calculate \$1 (Noot!) = (-b+Vd)

-> Calculate 12 (100t2) (-b-vt)

Display real and distinct roots (11,12)

() Else it (d<0)

—, Display no real solution

7) STOP

-> Program: import java. util. Scanner; import static java. larg. Math. sgrt, class Rab I f public static void main (String args []) { Scanner es = new Scanner (System.in); double a, b, c, d, x1, x2; - mittingly = System. out. println ("Enter the three int temp; co-efficients a, b, c of the quadratic equation"); a=88. ment Double (), 6= ss. rest Double (); c=ss. rest Double (); d=((b+b)-(4+a+c)); - talulate if (d==0) -> Display real and equal roots (2) top = 1; (20t d) = (2 t) = (2 temp=2, vitails boro loss poliquia co e else (26) to state solution

temp = 3; switch (temp) case 1: System , out, println ("The roots are real and 'equal"); R = R2 = (-b/(2+a));Sextem.out, println ("The roots are "+r1+" and "+12+""); raser; Seystern, out, println ("The roots are real and distinct"); 21= (-b+ sgrt(d))/(2°a); 2= (-b - sgrt(d))/(2ta); Septem. out, printle ("The roots are "tr1+" and "fret""); case 3: Eystem. out. frintln ("The roots are imaginary, that is there are no real solutions to gwen quadratic equation");

default: Septem. out. peintle ("Invalid input") break; use 1: System out, printly ("The roots pe  $\lambda_1 = \lambda_2 = (-b/(2+\alpha))$ eases: Septem out; frintle ("The roots are seal and distinct"); 210 (-b+ sqxt(d))/(eta); 22= (-b= sqxt(d))/(ita); System, out, printer (" the note are "+11+" case 3; System, out frintly ("The soot ale song irong, that is there are no real solution to quer quadrate equation")