```
import java.util.*;                                                    // need this for Scanner

class ThreePointsOnACircle

  {

    /* DETERMINE IF k IS ON THE ARC WHEN MOVING CLOCKWISE FROM j TO i ON A CIRCLE OF SIZE n.  */

    public static void main (String [ ]  args)

      {

        Scanner keyboard  =  new Scanner (System.in);                  // Scanner object wrapped around the keyboard, for user input

        int n, i, j, k;                                                // n is size of circle, and i, j, and k are the circular coordinates of  3 points on it

        // prompt user for values of n, i, j, and k; input values after each prompt

        System.out.print  ("\nEnter size of circle (n):  ");      n = keyboard.nextInt ();

        System.out.print  ("\nEnter first point (i): ");          i = keyboard.nextInt ();

        System.out.print  ("\nEnter second point (j): ");        j = keyboard.nextInt ();

        System.out.print  ("\nEnter third point (k):  ");        k = keyboard.nextInt ();

        // determine if n, i, j, and k satisfy all 4 necessary conditions and display appropriate message

        if ( n > 0  &&  i ≥ 0  &&  i ≤ n  &&  j ≥ 0  &&  j ≤ n  &&  k ≥ 0  &&  k ≤ n  &&  i ≠ j  &&          // conditions 1–3

           (k ≤ i < j  ||  i < j < k  ||  j < k ≤ i) )                                                       // condition 4

             System.out.println ("\n\nk lies on the arc from j to i when moving clockwise on a circle of size n");
```

```
        else
            System.out.println ("\n\nk does not lie on the arc from j to i when moving clockwise on a circle of size n");
    }                                                                                    // end main
}                                                                                        // end class ThreePointsOnACircle
```