```java
//************************************************
// TITLE: Power.java                             *
// AUTHOR: Kim Skak Larsen                        *
// DATE: 22/9 2001                                *
//                                                *
// The first example of a while loop invariant.   *
// The program computes x^p.                      *
//************************************************

import java.io.*;

public class Power
{
    public static void main ( String [] args )
    {
      int x, p, r, q;

      // Example values
      p = 5; x = 2;

      // Precondition: p >= 0

      r = 1; q = p;

      while /*I*/ ( q != 0)   // Invariant: r * x^q = x^p
      {
          r = r * x;
          q = q - 1;
      }

     // Postcondition: r = x^p

      System.out.print(r + "\n");

    } // main

} // Power
```