Create class **PiEstimateMethod**, which should consist of 2 methods:

- **main**, which should
  - Create a Random object: **Random random = new Random(1234);**
  - Prompt the user to enter a sequence of numbers, ending with 'Q' (or any other non-integer input) to quit
  - Read the numbers, interpreting each as the number of tries to use to estimate PI
  - For each number the user enters, call the method **estimatePi**
  - For each estimation of PI, create a line of output in the format shown in the example below
  - Emit the message "BYE" when the user ends the loop with a non-numeric input
- **public static double estimatePi(int numTries, Random random)**, which should
  - Compute and return an estimate of PI using the technique described in class, a condensed version of which is:

```
int numTries = 10000;
int hits = 0;
for (int i = 1; i <= numTries; i++) {
     double x = random.nextDouble();
     double y = random.nextDouble();
     // Check whether the point lies in the unit circle
     if (x * x + y * y <= 1) {
          hits++;
     }
}
double piEstimate = 4.0 * hits / numTries;
```

Be sure your indentation and documentation are correct. Here is a method comment you could use to document `estimatePi`:

```
/**
 * This method computes an estimate of PI by generating random (x,y)'s in the
 * positive quadrant of the unit circle and then taking the ratio of the
 * number of times (x,y) is within the unit circle to the total number of
 * (x,y)'s generated. Multiplying that ratio by 4 gives the estimate of PI.
 *
 * @param numTries the number of tries to use in estimate
 * @param random the Random object with which to generate random doubles
 * @return An estimate of PI using numTries
 */
```

Example (input in **green**):

```
Enter number of tries (Q to quit):
1000
With 1,000 tries, your estimate of PI is 3.180000
10000
With 10,000 tries, your estimate of PI is 3.140800
100000
With 100,000 tries, your estimate of PI is 3.140440
1000000
With 1,000,000 tries, your estimate of PI is 3.142104
10000000
With 10,000,000 tries, your estimate of PI is 3.142242
10000000
With 10,000,000 tries, your estimate of PI is 3.142810
q
BYE
```

After you feel your program is correct, further test your program, by obtaining **AutoGrade.jar** from this assignment. Put it and a copy of your **PiEstimateMethod.java** in the same directory. Then run it as shown in the example.

```
MYPROMPT>java -cp AutoGrade.jar;. AutoGrade2 PiEstimateMethod
Compilation is successful
Method estimatePi works correctly

Input:
123 1234 12345 123456 Q
Right Answer:
"With 123 tries, your estimate of PI is 3.186992
With 1,234 tries, your estimate of PI is 3.121556
With 12,345 tries, your estimate of PI is 3.140705
With 123,456 tries, your estimate of PI is 3.141395
BYE"
Your Answer:
"With 123 tries, your estimate of PI is 3.186992
With 1234 tries, your estimate of PI is 3.121556
With 12345 tries, your estimate of PI is 3.140705
With 123456 tries, your estimate of PI is 3.141395
BYE"

Score:  94%
```

When your program works correctly, submit it.