1. Write a static method countFactors that accepts in integer parameter returns the number of factors of the integer.

countFactors(24) returns 8 because   
1, 2, 3, 4, 6, 8, 12, and 24 are factors of 24.

1. Write a static method isPrime which returns whether or not an integer is prime. This method must call countFactors.

Example: isPrime(27) returns false and isPrime(47) returns true.

1. Write a static method countPrimes that accepts in integer parameter n returns the number of primes from 2 to n.

countPrimes(24) returns 9 because   
2, 3, 5, 7, 11, 13, 17, 19, 23 are primes less than or equal to 24.

4. How many primes are less than 1000?

Write a static method named fourHeads that repeatedly flips a coin until four heads in a row are seen. You should use Math.random() to give an equal chance to a head or a tail appearing. Each time the coin is flipped, what is seen is displayed (H for heads, T for tails). When four heads in a row are flipped a congratulatory message is printed. Here are possible outputs of two calls to fourHeads:

|  |
| --- |
| T T T H T H H H H  Four heads in a row!    T H T H T T T T T H H T H H H H  Four heads in a row! |