interface IsPrime{

boolean isPrime(int n);

}

class PrimeTester implements IsPrime{

@Override

public boolean isPrime(int n){

boolean flag=true;

for(int i=2; i<=n-1; i++){

if((n%i)==0)

{

flag=false;

break;

}

}

return flag;

}

}

class ImprPrimeTester implements IsPrime{

@Override

public boolean isPrime(int n){

boolean flag=true;

for(int i=2; i<=n/2; i++){

if((n%i)==0)

{

flag=false;

break;

}

}

return flag;

}

}

class FasterPrimeTester implements IsPrime{

@Override

public boolean isPrime(int n){

boolean flag=true;

for(int i=2; i<=Math.sqrt(n); i++){

if((n%i)==0)

{

flag=false;

break;

}

}

return flag;

}

}

class FastestPrimeTester implements IsPrime{

@Override

public boolean isPrime(int n){

int a=2;

return Math.pow(a,n-1)%n==1;

}

}

public class TW7 {

public static void main(String[] args) {

PrimeTester p1=new PrimeTester();

ImprPrimeTester p2=new ImprPrimeTester();

FasterPrimeTester p3=new FasterPrimeTester();

FastestPrimeTester p4=new FastestPrimeTester();

System.out.println("32 is Prime? "+p1.isPrime(32));

System.out.println("17 is Prime? "+p1.isPrime(17));

System.out.println("32 is Prime? "+p2.isPrime(32));

System.out.println("17 is Prime? "+p2.isPrime(17));

System.out.println("32 is Prime? "+p3.isPrime(32));

System.out.println("17 is Prime? "+p3.isPrime(17));

System.out.println("32 is Prime? "+p4.isPrime(32));

System.out.println("17 is Prime? "+p4.isPrime(17));

}

}