五、(10分) Find the appropriate value for the decrypting key \( n \) and \( d \) in an RSA public key cryptography system based on the primes \( p = 7 \) and \( q = 19 \) and the encryption key \( e = 5 \).

六、(10分) Before A, B, C, and D ran a race they made the following predictions
A predicted that B would win.
B predicted that D would be last.
C predicted that A would be third.
D predicted that A's prediction would be correct.
Only one of these predictions was true, and this was the prediction made by the winner. In what order did A, B, C, and D finish the race?

七、(10分) Suppose the procedure Modify is defined in pseudocode by

```pseudocode
procedure Modify (X)
    Y ← 9;
    print the value of Y;
    print the value of Y.
```

Also suppose that \( X \) is a global variable. If parameters are passed by value, what will be printed when the following program segment is executed? What if parameters are passed by reference?

```pseudocode
X ← 5;
apply the procedure Modify to X;
prompt the value of X;
```
八．(10分) Modify the following program so that the class defines a queue rather than a stack.

```java
class StackOfIntegers
{
    private int[] StackEntries = new int[20];
    private int StackPointer = 0;
    public void push(int NewEntry)
    {
        if (StackPointer < 20)
            StackEntries[StackPointer++] = NewEntry;
    }
    public int pop()
    {
        if (StackPointer > 0) return StackEntries[--StackPointer];
        else return 0;
    }
}
```

九．
1. (5分) What is the difference between the public and private parts of a class?
2. (5分) Describe how inheritance might be used to develop classes describing various types of building.
3. (5分) In an object-oriented programming environment, how are types and classes similar? How are they different?