CS354-1
ta3
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Q 6.1, P 286) Associativity versus commutativity.

These statements are not contradictory. Once associativity has been established then compiler checks for commutative property of the binary operator.Sometimes these operator are naturally commutative like operand string type data example :

Associative property:

```
("a" + "b") + "c" == "abc"
"a" + ("b" + "c") == "abc"
```

But not commutative:

```
"a" + "b" = "ab"
"b" + "a" = "ba"
```

Sometimes commutative like integer type data :

3+4=4+3

Q 6.2 ,P 286): Unary versus binary.

Not intuitive, Cause unary and binary should have different precedence so in that way it doesn't cause ambiguity.The only way we can explain this is that in these two languages unary expression will be evaluated from left to right and that is how the compiler recognize the precedence levels.

Q 6.12 ,P 288): Short-circuit evaluation.

In the scenario that both of the boolean expression function should be tested but because of the the short circuit it doesn't produce the right answer.
For && operator only one side of boolean expression should be false to evaluate if statement as false and for || operator only one side of expression should be true to evaluate if statement as true.

Example for short circuit : (program should result in segmentation fault error)

```
int a[3]={1,2,3};
 int b=4;
if( b==4 || a[1000]==0 )
  print(“Greg is one of the very best")
 if(!( b==3 && a[1000]==0))
  print(“and so is Ian")
```

Q 6.25, P 289) Mid-test loops.

```
int no_blank = true;
do {
  line = read_line();
  no_blank = !all_blanks(line);
  If(no_blank){
   consume_line(line);
  }
} while(no_blank)
```

The mid-test loop is functionally the same as the mid-test loop with equal complexity the difference is the if statement that removes a line if it is not all blanks.

Q 6.26, P 290) : Gotos.

```
int first_zero_row = -1;
int I, j;
Bool allZero;
For(I = 0; I < n; i++){
 For(j = 0; j < n; i++){
  If(allZero = !A[i][j]){
   Break;
  }
 }
 If(allZero){
  First_zero_row = I;
  Break;
 }
}
```

This solution is the same with one more if condition and using flag to control the execution,The goto in his program have been used to jump to the code below that for loop which makes the program less readable.The better approach is to execute the program in a sequential manner.