Homework #14: p.379 nos. 3, 5, p.381 nos. 4, 5.

Answers for questions on p.379 are not included.

Question 4: Consider the following C program segment. Rewrite it using no gotos or breaks

```
j = -3;
for (i = 0; i < 3; i++) {
      switch (j + 2) {
            case 3:
            case 2: j--; break;
            case 0: j += 2; break;
            default: j = 0;
      }
      if (j > 0) break;
      j = 3 − i;
}
```

Answer:

```
j = -3;
for (i = 0; i < 3; i++) {
      int temp = j + 2;
      if (temp == 2) j--;
      else if (temp == 0) j += 2;
      else if (temp != 3) j = 0;
      if (j <= 0) j = 3 − i;
}
```

Question 5: In a letter to the editor of CACM. Rubin (1987) uses the following code segment as evidence that the readability of some code with gotos is better than the equivalent code without gotos. This code finds the first row of an n by n integer matrix named x that has nothing but zero values.

```
for (i = 1; i <= n; i++) {
      for (j = 1; j <= n; j++)
            if (x[i][j] != 0)
                  goto reject;
      println ('First all-zero row is:', i);
      break;
reject:
}
```

Rewrite this code without gotos in one of the following languages; C, C++, Java, C#, or Ada. Compare the readability of your code to that of the example code.

Answer:

```
boolean found = false;
for (i = 1, i <= n; i++) {
      int counter = 0;
      for (j = 1; j <= n; j++) {
            if (x[i][j] == 0)
                  counter++;
      }
      if (counter == n && found == false) {
            printf("First all-zero row is: %d", i);
            found = true;
      }
}
```