1. Implement the following high-level CASE statement using LC-2 assembly code. Do not use self-modifying code as shown in class. (6)

```lc-2
while (true){
    cout << "Enter a number? "
    cin >> R1;
    select (R1){
        case 0:
            cout << "This is case 0" << endl;
            break;
        case 1:
            cout << "This is case 1" << endl;
            break;
        case 2:
            cout << "This is case 2" << endl;
            break;
    }
}
```

2. In the Tic-Tac-Toe game, we need to check for three adjacent X's to determine if player X has won. Write a subroutine to perform this check. The subroutine returns with the "P" (positive) flag set if X has won, and reset otherwise. The 3x3 Tic-Tac-Toe board is stored in 9 consecutive memory locations as defined by the statement and picture

```
Board .BLKW 9, x0000

<table>
<thead>
<tr>
<th>location 0</th>
<th>location 1</th>
<th>location 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>location 3</td>
<td>location 4</td>
<td>location 5</td>
</tr>
<tr>
<td>location 6</td>
<td>location 7</td>
<td>location 8</td>
</tr>
</tbody>
</table>
```

The contents of these locations are defined as follows: (6)

- 0 = empty
- 1 = X in location
- -1 = O in location