Name: _____

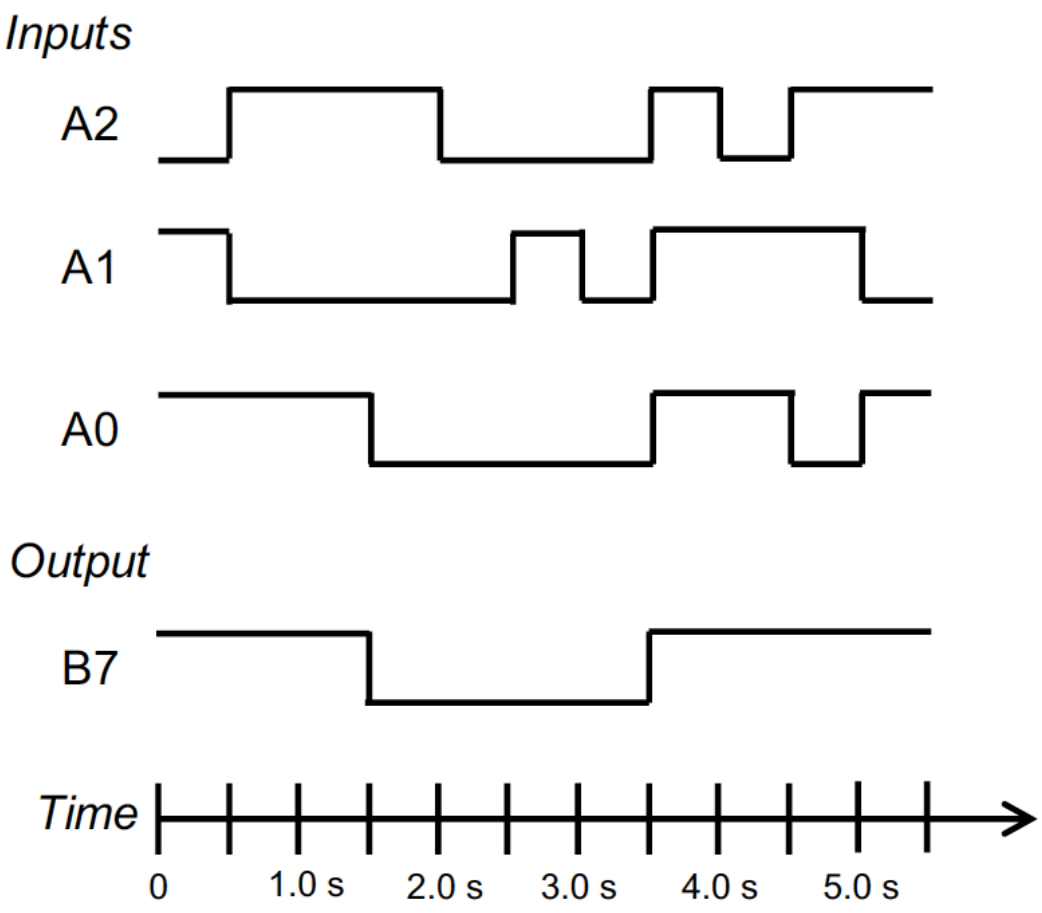
PES, Section 1.4
Timing Diagrams

1. The following C program for RIM sets B7 = 1 whenever the number of 1s on A2, A1, and A0 is greater than the number of zeroes (i.e., when A2A1A0 are 111, 110, 101, or 011).

```
#include "RIMS.h"

void main() {
        while (1) {
                B7 =    (!A2 &&  A1 &&  A0) ||
                        ( A2 && !A1 &&  A0) ||
                        ( A2 &&  A1 && !A0) ||
                        ( A2 &&  A1 &&  A0);
        }
}
```

A partial timing diagram for the three input signals is shown below. Complete the timing diagram by plotting the value for output signal B7.



Name: _____

2. (Note: The program below is the same as for Question 1.)

The following C program for RIM sets B7 = 1 whenever the number of 1s on A2, A1, and A0 is greater than the number of zeroes (i.e., when A2A1A0 are 111, 110, 101, or 011).

```
#include "RIMS.h"

void main() {
        while (1) {
                B7 =    (!A2 &&  A1 &&  A0) ||
                        ( A2 && !A1 &&  A0) ||
                        ( A2 &&  A1 && !A0) ||
                        ( A2 &&  A1 &&  A0);
        }
}
```

A partial timing diagram for the three input signals is shown below. Complete the timing diagram by plotting the value for input signal A0.

(Note: Multiple correct solutions are possible)