Module 8   Due the next class meeting after Module 8 is done in class.

1.   Modify the dot product routine to use Word-Wide Optimization

```
          MVK  .S1    40, A2              ; A2 = 40, loop count

   loop:  LDH  .D1    *A5++, A0     ; A0 = a(n)

          LDH  .D1    *A6++, A1     ; A1 = x(n)

          MPY  .M1    A0, A1, A3    ; A3 = a(n) * x(n)

          ADD  .L1    A3, A4, A4    ; Y = Y + A3

          SUB  .L1    A2, 1, A2     ; decrement loop count

   [A2]   B    .S1    loop          ; if A2 ≠ 0, branch

          STH  .D1    A4, *A7        ; *A7 = Y
```

2. **How many cycles does the original code take? Be sure to include nop's.**

3. **How many cycles does the Word-Wide optimized code take?**