ECE 573

Problem Set 8: Common subexpression elimination

Consider the following basic block:

```
1:   LD A, T1
2:   LD B, T2
3:   T3 = T1 * T2
4:   T4 = T3 + T1
5:   T5 = T1 * T2
6:   T3 = T5 + T2
7:   T6 = T3 + T1
8:   T7 = T5 + T2
```

1. After each statement, indicate which expressions are "available."

2. Show what this code looks like after performing CSE. If you encounter a re-used expression, replace the instruction that calculates the expression with a new instruction copying the old temporary into the new one. In other words,

```
T3 = T1 + T2
T4 = T1 + T2
```

would become

```
T3 = T1 + T2
T4 = T3
```