Homework #8
Due We. 4/29

A number of these homework problems require you first go through the "Solved Problems" since
the description/definition is not in the chapter material.

You are allowed to use Matlab (or similar) to help solve these problems but will be required to
know how to do them by hand for the Final Exam. As an example, you may want to find the
inverse using the Symbolic Toolbox:

```
syms z;                    % create symbolic variable z
A = eye(3);                % create simple system matrix
G = (z*eye(3) -A)^-1       % find inverse
```

Other Matlab functions that may be helpful include `inv.m, rank.m, eig.m`.

1. (Schaum 7.9 - 7.10)

   Note this problem is solved in the book already but highlights the difference between Direct
   Form II (Fig 7-9 Canonical simulation of the second form) and Direct Form II Transposed
   (Fig. 7-8 Canonical simulation of the first form). Be sure to understand the difference between
   the two of these forms.

2. (Schaum 7.56)

3. (Schaum 7.57)

4. (Schaum 7.58)

   You only need to provide one of the canonical forms. Also, draw the block diagram for the
   form you select.

5. (Schaum 7.60(b))

6. (Schaum 7.62)