1. Work the following problems from the textbook.
   a. Chapter 6, chapter review exercises, problems 2, 4, 6, 8, and 10
   b. Chapter 6, section 5. Find a symmetric matrix $A$ so that the associated form of the
      equations in problems 8 and 12 can be written as $v^TAv$
   c. Chapter 6, section 5. Find the associated form of the quadratic equation associated
      with the matrix $A$ in problems 18 and 19.

2. Find a symmetric form of the following matrices such that the resulting quadratic equation
   $v^TAv$ is unchanged.
   a. $A = \begin{pmatrix} 2 & 4 & 6 \\ 0 & 1 & 8 \\ 0 & 0 & 3 \end{pmatrix}$
   b. $A = \begin{pmatrix} -1 & 3 & 2 \\ -5 & 3 & 4 \\ -4 & 2 & 3 \end{pmatrix}$