In-class work and Homework for Tuesday 5/17

- Do EXAMPLE 6.2.3 (on pages 171-173) and answer the question of "Should you play the game?". Please explain when and why you think you should. Extra credit if you can find the actual expected value of playing this game. As of Tuesday 5/10, I have not calculated the expected value yet.

  In order to create the table that is mentioned in Step 2

  1. Do Step 1

  2. Do Step 2 up to and including the part that says Copy row 5 down to row 503.

  3. At this point, highlight the data from H3:J503.

  4. (Excel 2007) Click on Data / What if analysis / enter H1 into the "column input cell".

  5. (Excel 2003) Click on Data / Table / enter H1 into the "column input cell".

  6. Do Steps 3 and 4.

- Do EXERCISES 6.2.3 and 6.2.6 (on pages 173-174)

- In EXERCISE 6.2.2, calculate the theoretical (not experimental) probability that the number of tails obtained in 10 rolls is between 4 and 7 (inclusive).

- Do EXERCISES 5.4.1 and 5.4.2 on pages 147-148.

- Do EXERCISE 5.6.3 on page 162

- Solve the following Differential Equations (using eigenvalue / eigenvector pairs). If given an initial value, that will allow you to find the unique values of c_1, c_2.

  1.
  $$\dot{\vec{x}} = \begin{bmatrix} -2 & 1 \\ -5 & -4 \end{bmatrix} \vec{x}, \qquad \begin{bmatrix} x(0) \\ y(0) \end{bmatrix} = \begin{bmatrix} 1 \\ 3 \end{bmatrix}$$

  2.
  $$\dot{\vec{x}} = \begin{bmatrix} 1 & 2 \\ -5 & -1 \end{bmatrix} \vec{x}$$