GENERATING RANDOM NUMBERS:

Format: Random r = new Random();
r.Next(7); 0-6
r.Next(1,7); 1-6
r.Next(6)+1 1-6

Generalization
To generate any integer number between x and y => r.Next(y-x+1) +x

THE RND FUNCTION - YOUR TURN

1. Provide the C# expressions that generate the following random numbers.
   a) A decimal number between 0 and 1
   b) A whole number between 1 and 10
   c) A whole number between 1 and 1000
   d) A whole number between 1 and 8
   e) A whole number between 5 and 25
   f) A whole number between 20 and 36
   g) A decimal number between .20 and .36
   h) A whole number between -90 and 80

PROGRAMMING PROBLEMS:

1. Suppose two players are playing a game in which each one moves his/her chip a certain number of times, depending on where the dial stops on a spinner. The dial may stop at any number from 1 to 9 inclusive. Write a program that determines which player made the greatest number of moves after each one had 10 plays.
   a) Use a **for/next** loop to control the number of plays
   b) Generate a random number from 1 to 9 for the first player. This represents the number of moves he/she can make. Immediately following this statement, accumulate the player's moves.
   c) Do the same for the second player.
   d) After 10 plays, find the winner by comparing the accumulated moves of the two players.
   e) Print the winner as show in the sample **run**.

   PLAYER 1 IS THE WINNER
   WITH A TOTAL OF 52 MOVES

2. It was demonstrated in a previous sample program that the random number generator can be used to simulate the roll of a pair of dice. Write a program that finds out how many times a roll of dice adds to 7 if the pair are rolled 50 times. Remember, the random numbers must be converted to whole numbers between 1 and 6.
   a) Use a **for/next** loop to control the number of times the pair of dice are rolled.
   b) Keep a running counter to accumulate the number of times the number 7 is rolled.

   THE NUMBER 7 WAS ROLLED
   12 TIMES OUT OF 50 ROLLS

3. Write a program which determines how many times a toss of 100 coins contains 47 heads if the experiment is performed 50 times. Your output should have the following form.
   IN 50 EXPERIMENTS
   THERE WERE 7 OCCURRENCES
   OF 47 HEADS OUT OF 100