Math 102

Test 2 Model

March 18, 2010

KEY

1. **Problem of the Points – Blaise lacks 3, Pierre lacks 1, Christian lacks 2, when the game ends prematurely. How are they to split the pot? Show your work.**
   6/81, 57/81, & 18/81, respectively.
2. **Draw the probability tree for the following game: A six-sided die is tossed. If it comes up 1,2, or 3, Sue wins. If it comes up 4 or 5, Kay wins, and if it comes up 6, Linda wins. The die is tossed until someone wins 2 times. Use your tree to determine the probability that Kay wins the game.**
   17/54
3. **The chance that the Yankees win any given baseball game they play is 0.6. Suppose the Yankees play the Phillies 4 times. What is the probability that the Yankees win a) all four games, b) 3 out of the 4, c) 2 out of 4, d) 1 out of 4, e) none of the games.**
   a) $.6^4$
   b) $4x.6^3x.4$
   c) $6x.6^2x.4^2$
   d) $4x.6x.4^3$
   e) $.4^4$
4. **Sum the following series: $5 - 10/3 + 20/9 - 40/27 + \ldots$ = 3**
5. **Find average and instantaneous velocities on a graph – or sketch a graph that has specified average and instantaneous velocity behavior.**
6. **Find the equation of the tangent line to $y = 5x^3 - 12x^2 + 10x - \sqrt{x} - 8$ at x=1.**

   $y = x/2 - 13/2$