

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Math 10 Honours section 7.5 Binomial Distribution**

1. A recent survey of British Columbia high school grade 12 students revealed that 65% of students did not take Math 12. Determine the probability that in a group of 100 randomly selected grade 12 students:
  - a. Exactly 31 took Math 12.
  
  
  
  
  
  
  
  - b. At least 31 took Math 12
  
  
  
  
  
  
  
  - c. Between 31 and 45 inclusive took Math 12.
  
  
  
  
  
  
  
  
  
  
2. A certain game involves rolling a pair of dice. If doubles, a sum of eleven or a sum of seven is rolled, a person would win the game. A person plays the game six times.
  - a) Given that the person won at least four times, what is the probability that the person won exactly five times?
  
  
  
  
  
  
  
  
  
  
  - b) Use the binomial probability functions in your calculators for this question. Include the function and the values used to determine your answer

3. The Canucks are playing a best of seven series against the Sharks. The probability of the Canucks defeating the Sharks on any given game is 0.55. Determine the probability of the Canucks winning the series in at most six games.
4. A coin is altered so that the probability that it lands on heads is less than 0.5 and when the coin is flipped four times, the probability of an equal number of heads tail is  $1/6$ . What is the probability that the coin lands on heads? Amc 12 2010
5. Each face of a cube is painted either red or blue, each with probability 0.5. The color of each face is determined independently. What is the probability that the painted cube can be placed on a horizontal surface so that the four vertical faces are all the same color? Amc 12 2004
6. A box contains exactly five chips, three red and two white. Chips are randomly removed one at a time without replacement until all the red chips are drawn or all the white chips are drawn. What is the probability that the last chip drawn is white? Amc 2001