1. State the Binomial formula.

2. What does \( p \) in the formula stand for?
   
   What does \( q = (1 - p) \) in the formula stand for?

For questions 3 through 5, for the given \( n, x, \) and \( p \), determine what the probability of \( x \) is.

3. \( n = 7, \ x = 2, \ p = 0.2 \)

4. \( n = 3, \ x = 1, \ p = 0.6 \)

5. \( n = 4, \ x = 3, \ p = 0.9 \)

6. Select 6 cards from a standard deck of cards with replacement
   
   a. Find the probability that exactly 3 of the 6 cards are picture cards.

   b. Find the probability that exactly 2 of the 6 cards are spades.