Probability
Application Questions

1. Use Pascal's Triangle to determine the probability of:
    a. Getting exactly four heads with 6 coin tosses?

    b. Getting exactly one tail with 5 coin tosses?

    c. Getting at least two heads with 4 coin tosses?

2. A teacher has 12 students in a class and wants to divide the class into groups. Use Pascal's Triangle to determine:
    a. How many different groups of two can there be?

    b. How many different groups of three can there be?

    c. How many different groups of four can there be?

3. List the different outcomes possible in an experiment where a coin is flipped and dice is rolled. What is the total number of possible outcomes? Is it possible to determine the total number of possible outcomes mathematically?

4. A jeweler makes necklaces using three different precious stones.
    a. How many different kinds of necklaces could the jeweler make if he has three pearls, four rubies, five emeralds and two sapphires?

    b. What is the probability of the jeweler making a necklace which only has pearls and sapphires? (Hint: Think of there being only two possible outcome and use Pascal's Triangle.)