UW Math Circle
November 13, 2014
Homework

1. If you flip a coin 6 times, how many ways are there to get...

    (a) exactly 2 heads?

    (b) exactly 2 heads in a row?

    (c) at least 3 tails?

    (d) exactly 4 tails when the first flip was a tail?

2. Katie is making a necklace for her sister. She has 10 different beads to put on the necklace. How many different necklaces could Katie possibly make (using all 10 beads)?

3. How many ways are there to put a white and a black knight on chessboard so they do not attack each other?

4. Dogs and cats live in an animal shelter in a row of 24 kennels, one animal in each kennel. If two dogs cannot live in neighboring kennels because they'll bark at each other, find the total number of possibilities for housing the animals.