

# Quiz 20

written by Alvin Wan . [alvinwan.com/cs70](http://alvinwan.com/cs70)

Thursday, April 7, 2016

**This quiz does not count towards your grade.** It exists to simply gauge your understanding. Treat this as though it were a portion of your midterm or final exam. In this quiz, we will walk through various sorts of independence.

## 1 Determining Independence

1. Let  $X$  and  $Y$  be the number of pips rolled for two different dice. What is  $E[XY]$ ?  $P[X = 1, Y = 3]$ ?
2. Compute  $var(X)$ , where  $X$  is the number of heads after  $n$  flips of a biased coin with heads-probability  $p$ .