

## Quiz 6

**True/False** - No explanation needed. (For each: 1 point if correct, 0 points if not answered, -1 points if incorrect)

1. If  $X$  is the random variable of the product of two dice rolls, then  $|X^{-1}(4)| = 3$ . True/False
2. If  $A$  and  $B$  are disjoint, then they are independent. True/False

**Problems** - Needs justification.

1. How many people  $n$  are necessary to have at least a  $1/2$  chance that at least three people are born on a Tuesday? Assume a birthday occurs on a given day of the week with probability  $1/7$ . We don't need an actual number, just an equation with  $n$  as a variable. (10 points)