

 *Oversold Flight Problem* →

Airlines sometimes overbook flights. Suppose that for a plane with 50 seats, 53 passengers have tickets. Define the random variable  $X$  as the number of ticketed passengers who actually show up for the flight. The probability distribution for  $X$  appears in the following table.

$X$	$P(X)$
53	0.03
52	0.06
51	0.08
50	0.17
49	0.34
48	0.20
47	0.12

- (a) What is the probability that the flight will accommodate all ticketed passengers who show up?
- (b) What is the probability that not all ticketed passengers who show up can be accommodated?
- (c) If you are the first person on the standby list (which means you will be the first one to get on the plane if there are any seats available after all ticketed passengers have been accommodated), what is the probability that you will be able to take the flight?
- (d) What is this probability if you are the third person on the standby list?