

## Sample Questions: Limits

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1. Let  $S$  be the sum of 16 independent Uniform(0,1) random variables. Find the approximate  $P(S > 12)$ . You may use the fact that a Uniform(0,1) has expected value  $\frac{1}{2}$  and variance  $\frac{1}{12}$ .

2. A multiple choice test has 50 questions with answers ABCD. If a student answers completely at random, what are the chances of getting 30% or better? You may use the fact that a Bernoulli( $p$ ) has expected value  $p$  and variance  $p(1 - p)$ .

3. In a walk-in medical clinic, the time a doctor spends per patient (including paperwork) comes from an unfamiliar skewed distribution with mean 5.1 and standard deviation 4.8 minutes. Find the maximum number of patients that should be scheduled so that the probability of working more than a 7 hour day will be less than 5%.

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<http://www.utstat.toronto.edu/~brunner/oldclass/256f18>