Marika Swanberg. Collaborators: None, September 6, 2018

1. (a) The error for $n$ random variables sampled from the same distribution is roughly bounded above by $1/\sqrt{n}$. So, $n$ in this case is the number of runs times the number of objects.

   Furthermore, I wanted to bound the error to less than 1%. Thus, through simple algebra I devised the following formula to determine the number of runs that I need:

$$runs \geq \frac{10000}{2^x} \tag{1}$$