6-3. We first made $n_0=10$ replications of the solution for Exercise 5-3. From Arena Report, we got 95% confidence interval half-widths for expected average cycle time of 2.11 for the primary trimmer and 14.77 for the secondary trimmer. To get these both down to 1, we work with the worst (14.77) and compute the approximate number of required replications:

From the first approximation, the standard deviation of the cycle time for the secondary trimmer is

$s_0 = \dfrac{\sqrt{n_0} \times h_0}{t_{n_0-1,1-\alpha/2}} = \dfrac{\sqrt{10} \times 14.77}{2.262} = 20.65$. The replications to achieve the desired half-width down

to one minute are

$$n \cong z_{1-\alpha/2}^2 \frac{s_0^2}{h^2} = 1.96^2 \times \frac{20.65^2}{1} = 1638.1$$

So we round up to 1639 replications.

Apply the second approximation

$$n \cong n_0 \frac{h_0^2}{h^2} = 10 \times \frac{14.77^2}{1} = 2181.5$$

So we round up to 2182 replications.