(3) Estimate a, b, T from measured bandwidth & DC Gain in Procedures 1.1 and 1.2 using $\omega_{BW} = aT$ and $K = \frac{b}{a}$ (ω_{BW} := bandwidth freq., K := DC Gain)

From Procedure 1.1, $K = 0.9127$

From Procedure 1.2, $f = 35.6$ Hz

$\Rightarrow \omega_{BW} \doteq 223.68$ rad/s

$\Rightarrow T = 100 \Rightarrow a \doteq 2.2368$, $b \doteq 2.0415$

(4) Compare these estimates with actual simulation params.

Actual Params:

$a_{sim} \doteq 2.0646$, $b_{sim} \doteq 1.8846$, $T_{sim} = 100$

$$\Rightarrow a_{err} = \frac{|a - a_{sim}|}{a_{sim}} \doteq 8.34\%$$

(absolute relative true error)

$$\Rightarrow b_{err} = \frac{|b - b_{sim}|}{b_{sim}} \doteq 8.33\%$$

(absolute relative true error)

$\Rightarrow T_{err} = 0\%$