\[
\begin{align*}
R_A & = 2.8 \, \text{k} \Omega \\
R_B & = 82 \, \text{k} \Omega \\
C & = 100 \, \mu\text{F}
\end{align*}
\]

Voltage at output to motor (assuming transistor has same effect as final circuit)

\[V_{\text{out}} = 568 \, \text{mV}\]

Duty Cycle of 555 @ \(\frac{1}{14} \text{Hz}\) is \(\frac{8 \, \text{sec}}{13.9 \, \text{sec}} = 57.55\%\)